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EXCAVATIONS IN THE DEANERY FIELD AND ABBEY GREEN, 1935

BY R. NEWSTEAD AND J. P. DROOP

WITH PLATES I-XXVI

THIS report deals with excavations on two sites: the Deanery Field and the adjacent garden, No. 1 Abbey Green. The further exploration of the former was suddenly brought about by the decision of the Dean and Chapter to convert the field into a sports ground, thereby sealing up the sublying structural remains of Roman origin, and precluding for the time being further exploration of the site. Extensive levelling operations had actually begun before it was possible for us to start. We explored as much of the available ground as time allowed, but owing to the haste of the contractors to level the field we were frequently obliged to abandon a site which needed fuller investigation. Nevertheless the results added materially to our former knowledge of the structural history and general layout of the NE. portion of the fortress. The earlier discoveries in the Deanery Field and Abbey Green have been made known from time to time in contributions to this journal,¹ and the plans of the structural remains therein recorded have been incorporated here (Pl. XXIV)²: these show that the barracks were arranged as at Novaesium, but the presence at Chester of important buildings in the rampart makes its fortress more like that at Caerleon³ than appears to be generally the case in early military centres.

The results obtained in 1935 include: (1) The rampart building in Abbey Green (p. 7); (2) The second interval tower to the northern defences (p. 10); (3) traces of the NE. angle tower (p. 11); (4) a section

1. Vols. XI (1924), XV (1928), XVIII (1931), and XXII (1935).

2. Except the walls discovered in 1923. These lay actually just to the north of the walls dug in 1935 (Blocks D and E, Pl. XXIV). In the light of the 1935 results it would seem that some slight error was made in planning the work of 1923, but owing to subsequent alterations in the modern walls from which the measurements were taken it has not been possible to correct the error.

3. Nash-Williams, *Arch. Camb.* (1931).

through the E. rampart (p. 11); (5) the postern gate and road to the retentura (p. 12); (6) the barracks, including the N. end of block A; transverse sections of blocks D and E; and a length of about 160 feet of the outer (eastern) block F (p. 14).

ACKNOWLEDGMENTS

We wish to express our indebtedness to the Very Rev. the Dean, who willingly gave permission to dig, and to the Misses M. and E. Paige Cox for the material assistance rendered throughout the investigations. Others to whom we are also indebted are: Professor Donald Atkinson, who gave us the benefit of his valuable advice, and jointly with Miss M. V. Taylor secured important grants from Manchester and Oxford. We also tender our thanks to Mr. W. F. Irvine for the long and constant interest he has taken in all our investigations, and to Mr. G. B. Leach for the material aid that he gave.

Our campaign in 1935 was financed by a fund collected in part by the Excavations Committee composed of representatives of the Chester and North Wales Archaeological Society. This fund included contributions from the following: Haverfield Bequest Committee, £25; The Manchester Branch of the Classical Association, £10; Mr. W. F. Irvine, £20; Mrs. Paige Cox and her daughters, the Misses M. and E. Paige Cox, £12; The Manchester Branch of the Society for the Preservation of Ancient Monuments, £5; and an anonymous donor of £10. Small sums were also collected from other sources.

SUMMARY

The history of the NE. portion of the fortress, as defined by our excavations, shows that there were two clearly defined phases in the occupation of the site. These may be summarised as follows:—

Phase I. The establishment of the fortress. The structural remains are clearly of first-century origin, and their foundation seems to fall within the years 70-85 A.D.¹ The dating of these early structures is based upon the direct evidence of the stratified pottery, and the series

1. This statement finds confirmation in the direct evidence afforded by the inscribed ingots of lead and the water-pipes found elsewhere in Chester, with the equivalent dates of 74 and 79 A.D., respectively.

of early coins of Vespasian (11) and Domitian (9). The material finds also point to an intensive occupation of the buildings to the end of the first or the early years of the second century. No evidence of a later occupation of them was discoverable. Furthermore, no radical changes in the general layout of the buildings were discovered; the only evidence of definite structural alterations was found in block B, room 18, where the footings of a cross-wall had been covered with a cement floor¹ under which a coin of Nerva (96-98 A.D.) was found.

Phase II. The dismantling or reduction of the fortress. This phase was clearly indicated in many parts of the Deanery Field by a more or

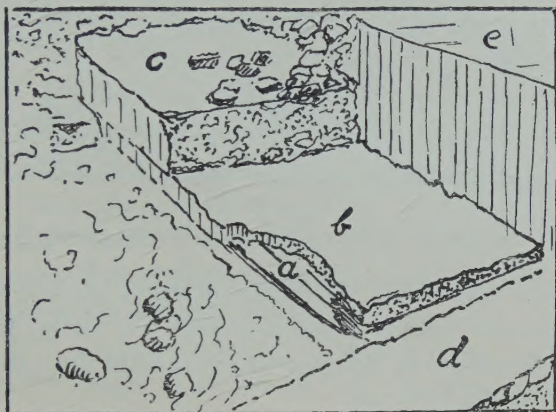


Fig. 1.

Outline of the photograph in *Liverpool Annals*, XVIII, Pl. III, Fig. c (1928).

a, hearth on first floor; b, second floor, both of first-century origin; c, upper Roman stratum (Antonine) capped with first-century wall plaster; d, party-wall to rooms 7A and 6A; e, surface. From the SW.

less uniform stratum systematically overspreading the foundations and floors of the buildings belonging to Phase I. This deposit consisted for the most part of tumbled masonry and other building materials, and varied in thickness from one to three feet. Illustrations of this stratum in its apparently undisturbed condition are given in our report for the year 1928.² For convenience of reference, tracings of two of these (Text Figs. 1 and 2) are here given. The stratum over part of block F (Pl. XXIV) is shown in Text Fig. 3. The dating of this deposit as Antonine was based in part on the evidence of the pottery and coins.

1. *Liverpool Annals*, XVIII, p. 13, Pl. II, Fig. b.

2. *Liverpool Annals*, XVIII, Pls. II, Fig. d, and III, Figs. c and d.

Of the latter, two were found together in the undisturbed stratum (*c, c* in Text Figs. 1 and 2): one of Faustina Jun. (141-175 A.D.) and a Greek Provincial piece of Marcus Aurelius (161-180 A.D.), both in fairly good condition. These coins bring us down almost to the termination of the

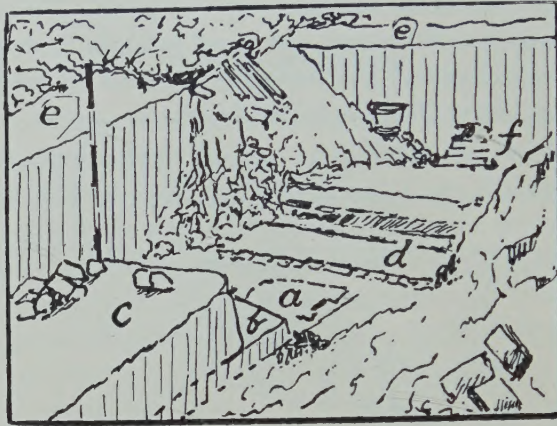


Fig. 2.

The same section from the NW.; with hearth (*f*) on upper first-century floor.

Antonine period (192 A.D.). As further evidence of date we have also the many legionary stamps found this year (see below, p. 40), which point to the demolition of buildings at the close of the second or at the beginning of the third century.

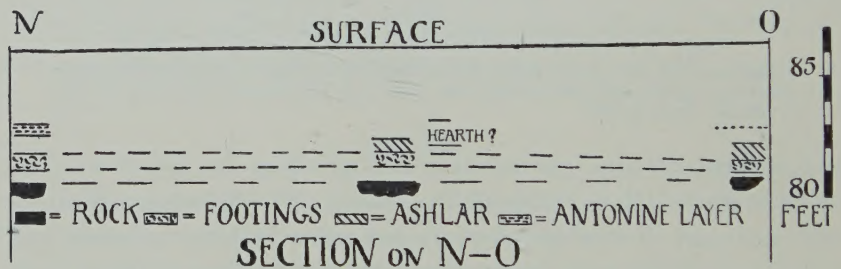


Fig. 3.—BLOCK F. Cf. Pl. XXIV

The presence, however, in places, in this deposit of material belonging to the third and fourth centuries makes the name, here adopted, 'Upper Roman stratum,' seem safer in spite of the fact that in places first-century building material including wall plaster had been used as a capping (Text Figs. 1 and 2, *c, c*) where the levelling process took place, and had practically sealed the second-century deposit beneath.

THE RAMPART BUILDING

ABBEY GREEN

Plates I, II, XIV and XXVI

The NW. angle of this building was discovered in 1935.¹ For a further examination of it we are again indebted to Mrs. Paige Cox and her daughters, the Misses M. and E. Paige Cox. The area left fallow for us did not, however, allow us to make a complete investigation. But we found that the building was 65 feet 4 inches long, and was divided into three rooms. Its width is conjectural, but it is highly probable that it was a relatively narrow structure similar to that found by Watkin in the Deanery Field¹ in 1883, which was stated to be 24 feet wide.

The outer (N.) retaining wall. This was of most excellent workmanship, 2 feet thick, composed of rather narrow courses of sandstone. The outer faces, which are illustrated in the report cited, had been finely dressed, but the masonry of the inner face (Pl. I), though good, had not been so carefully tooled. The lowest course of ashlar formed an offset 3.5 inches wide. The footings, composed of broken rock set in puddled clay, were laid on the natural rock.

Room No. 1. Length (E.-W.); 24 feet 2 inches. In our description of the inner NW. angle we stated that it 'was filled almost flush with the upper courses of the wall with broken roofing tiles set in puddled clay'—further, that 'this layer, presumably, represents the floor level of the room.' Our extended exploration E. along the S. face of the same wall proved that the so-called floor was the upper portion of a bank-like structure to a furnace or oven (see below), and that it was continuous throughout the entire length of the interior of the building. We were unable, however, to make a cross-section of it in this room.

Room No. 2. Length 16 feet. The W. party wall was 2 feet thick; that on the E. 11 inches. The W. face of the latter had, however, been cut away by a little more than half its original width (Pl. II, Fig. 3), and the ragged face thus left had been covered with arenaceous clay, and coated with a thin rendering of plain plaster resembling that on the interior of the N. wall. Furthermore, this party wall had also been stepped down, evidently at the time when the building was partly demolished,

1. *Liverpool Annals*, XXII, p. 24.

and the portion left *in situ* seemed to have served as a support for the bank-like structure.

There were two floors in this room (Section A-B, Pl. XXVI): The upper of good hard cement composed of gravel, etc., and faced with rather finely pounded tiles rested on a thin bed of finely broken rock and sand. No datable material was found in it. The lower floor of rammed clay, capped with charcoal, was flush with the top of the footings. The make-up below the clay was of sand and bits of rock, with much domestic refuse intermingled, meat bones of the ox, pig, and the domestic fowl; shells of the edible mussel, oyster, the common garden snail (*Helix aspersa*),¹ and much broken pottery. This last included two cooking-pots which admitted of reconstruction, carinated bowls, and a small flanged cup in imitation of the Samian form 24 (see Pl. XIV, Nos. 1, 2, 13 and 17); all of them characteristically Flavian in form and technique.

Room No. 3. Pl. II, Fig. 1; Pl. XXVI. Length (E.-W.), 20 feet 4 inches. The inner face of the outer (N.) wall had small patches of plain white plaster attached to it. The end wall (E.) had also been stepped down in a way similar to that dividing rooms 2-3. The offset consisted of three courses of ashlar and was 12 inches deep. One floor only was laid down in this room. It consisted of well-rammed clay with traces of gravel on its upper surface and had a thin capping of charcoal. The make-up below was of sand and bits of rock. Pieces of three vessels only were found below the clay (Pl. XIV, Figs. 4, 7 and 8). This scarcity of finds seems to indicate a less intensive occupation of this room than there appears to have been in the one next door.

There was one post-hole below the clay floor, 11 inches deep and 4 inches in diameter.

THE BANK-LIKE STRUCTURE

Plates II and XXVI

This structure is very puzzling, but the presence of a heavily burnt layer of clay with which it was capped suggests that it may have served as the foundation for a series of furnaces or the like. It was traced along the entire length of the interior of the building, in a narrow longitudinal

1. Shells of this mollusc have occurred so frequently, sometimes in considerable numbers, in association with domestic refuse that it seems highly probable that it formed part of the dietary of the legion.

cut (Pl. I, Fig. 2, and Pl. II, Fig. 2), and transverse cuts were also made through it in rooms Nos. 2 and 3. The nature of its construction may be summarised as follows :—

Its average height from the floor level was 2 feet 8 inches, its thickness at the base varying between 6 and 5 feet. Its upper surface was rounded off unilaterally, and bank-like in contour. Just in advance (S.) of its basal periphery was a cross-wall (see below) constructed almost entirely of re-used building materials. At the base was an almost solid mass of broken roof-tiles, with lime rubble and wall plaster intermingled. Over this were three or four very irregular courses of sandstone, much of it re-used ashlar, the whole set in puddled clay and covered with the same kind of material, but the clay covering was heavily burnt, sometimes to the hardness of brick. In both cross-sections the bank and also the wall at the foot of it were completely covered with a layer of fine charcoal, relatively thin at the top of the bank but thickening southwards and completely covering the cross-wall, attaining a maximum thickness of nearly 2 feet. No material finds occurred in it. Portions of two Samian vessels were found in the tile layer at the bottom of the bank in room No. 2. These were a small fragment of a bowl, form 37, and part of a large example of form 18 bearing the stamp **OF MASCLIN** (Pl. XI, Nos. 8 and 11).

The cross-wall at the foot of the bank (Pl. II, Fig. 4). Both sections of this wall rested upon the floors, and the ends were built against the inner faces of the party walls to rooms No. 2 and 3. They were very roughly constructed, set in sandy clay and the cores packed with odd bits of roofing tiles. What purpose these walls may have served is not at all clear. Obviously, however, they did not serve as revetments to the bank—they were too far south for that, and furthermore they showed no indication of having been subjected to the action of intensive heat.

SUMMARY

Two narrowly separated periods are indicated :—

1. The building can be ascribed with certainty to the earliest period of the occupation, *i.e.* Flavian times. The evidence also shows that it was not long in use, and that it was deliberately demolished apparently to make way for—

2. The construction of the furnaces or the like not later than the closing years of the first century.

THE INTERVAL TOWER OR TURRET IN THE DEANERY FIELD

Plates III and XXIV

The discovery of the interval tower to the northern defences of the fortress in 1933¹ pointed to the probable existence of a similar structure further E. Deliberate search was therefore made at a point about midway between the tower which had already been discovered and the NE. angle of the field. This resulted in the discovery of the second structure, 190 feet E. of the first and approximately 150 feet from the NE. angle of the existing City Walls. It had a maximum internal projection of 14 feet 7 inches, and a maximum width of 22 feet 6 inches. The walls are 3 feet 6 inches thick, that on the E. narrowing by one offset to 2 feet 9 inches. They are in excellent preservation, and set in good pebbled mortar. The upper surfaces of two short sections of the bilateral walls were left uncovered, but owing chiefly to the existence of a large sycamore tree which occupies practically the whole of the SE. portion of the tower, the remainder had to be filled in.

The illustration on Pl. III shows quite clearly how the English work (*b*, *b1*, *b2*) overlaps the E. wall of the Roman structure (*a*, *a1*). The core of the former (*b1*, *b2*) consists for the most part of loose rubble and earthy-sand, much of it without any trace of mortar, the whole mass being held in position on the S. face by a relatively thin veneer of ashlar (*c*). On the removal of the last named much of the core falls away (Fig. 1, *b1*), often leaving the rough undressed ends of the relatively large blocks of masonry which form the outer (N.) face of the wall quite exposed. These large blocks may in all probability represent the outer face of the original wall of the fortress, as their form and arrangement closely resemble those of the inner face of the stone revetment at the SE. angle of the fortress.²

The top soil covering the Roman work had evidently been added to the site in comparatively recent times, much of it during the seventeenth and eighteenth centuries, as tobacco pipes and slip-ware were found in it.³

1. *Liverpool Annals*, XXII, p. 19.

2. Cf. *Chester Journal*, XXIX, p. 44.

3. Southwards, a few feet in advance of the tower, this deposit attained a thickness of nearly 9 feet above the Roman occupation level. It appears to have been added as a support to the existing City Walls. Much of this great bank was removed during the recent levelling operations.

At the lower levels, however, Roman sherds were found but they had evidently been disturbed. Among these sherds was part of the flat handle of a mica-coated platter decorated with punctures and a cable design. Also some fragments of window glass and a shell of the marine mollusc—*Macra solida*.

THE NE. ANGLE TOWER

No extensive exploration of this was possible ; but during the levelling operations much soil was taken from the NE. corner of the field, laying bare a very short section of a substantial wall which, seemingly, represents the inner or W. face of the tower. Narrow cuts made close up to the inner face of the City Walls, in the hope of finding the bi-lateral walls of the tower, proved negative.

NORTHERN CUT THROUGH THE RAMPART

Plate V, Figs. 3 and 4

This cut was made to within 8 feet 7 inches of the existing City Wall. Here the top soil varied in thickness from 4 feet to 2 feet 3 inches, and much of it had evidently been laid down in the eighteenth century and added to at later periods. Below this was a great mass of fallen masonry, including some large blocks of ashlar still held together with good hard mortar. Next in sequence was a compact layer of roof and ridge tiles. On the former were several legionary stamps (Pl. XXI, Nos. 2, 3, 5 and 7) of late second-early third century. These were overlying what appeared to be a part of the original rampart. No datable material came from it. But 22 feet westwards from the E. end of our cut and well into the road was a small patch of refuse in which were a coin of Domitian (COS. XIII), and the remains of a fine cooking-pot (Pl. XVI, 74), meat bones, etc.

The presence in this cut of so much fallen masonry and roof-tiles suggests the existence of an interval tower near by. Unfortunately we were unable to carry out further exploration in that area.

POSTERN GATE TO THE RETENTURA

Plates IV, Figs. 3 and 4, XXIV and XXV

Having discovered the road running E.-W. at the S. end of block F, we thought that it might possibly lead to a gateway through the eastern defences of the fortress. Our first cut, made in alignment with the S. end of block F, laid bare the northern portion of the structure. Subsequently we were able to explore the foundations of the gate. Having done this we were obliged to abandon our work owing to the constant traffic of heavy motor lorries over the site. Furthermore, it was also impossible to carry out cuts close up to the existing City Wall owing to the presence of a closely packed row of old hawthorn trees.

The gate. This apparently had a single opening. The foundations consisted of two massive pier-stones each measuring 4 feet square, approximately, and the space between them 12 feet 8 inches. The paving of the passage consisted of irregular blocks of sandstone, much worn; they also dipped towards the centre of the opening, and in transverse section the surface presented a shallow concavity. The make-up below the paving consisted for the most part of sand and finely broken rock ('Roach') with a rather scanty admixture of lime. The fragments of pottery found in this stratum were all of late Flavian origin, including a mortarium (Pl. XV, No. 23), a shallow dish (Pl. XV, No. 49), part of a mica-coated bowl, etc.

Structures forming the E. side of the gateway (Pls. IV, Fig. 2, XXIV and XXV). Two structures were traced on the E. side:—

1. A cross-wall 2 feet wide running E. from the centre of the pier-stone; then a gap 4 feet 8 inches wide. The W. end of the wall did not quite reach the base of the pier, but it seemed fairly clear that this end had been robbed as it presented a jagged edge, and the ground in advance had evidently been disturbed. On the other hand the E. end terminated with well-squared ashlar. In the E. gap were two apparent floor levels: the upper one was continuous along the S. face of the cross-wall at the level of the top of the footings, and the lower at the level of the second course of ashlar in the wall at the E. end. Both floors were made up with a mixture of firmly rammed sand, finely broken rock and clay. Fragments of eight different vessels were found in the upper floor, including the side fragment of a small Samian dish (form 18), a cooking-pot of

rustic ware, and the vessels illustrated on Pl. XV, Nos. 27 and 47, all apparently of late Flavian origin.

There were also found in association with the above many pieces of vesicular slag, probably the residue of materials used in the manufacture of glaze or glass; some amorphous bits of iron; the metatarsal bone of a small Celtic sheep, and part of a human femur.

2. The E. wall. This was a massive structure with four offsets, composed of rather narrow courses of well-dressed sandstone, set in fairly hard mortar. This, presumably, represents the inner face of the fortress wall at that point, and is, approximately, 9 feet W. of the existing City Wall. Furthermore, it seemed to be continuous in both directions—N.-S. The space or gap between this and the cross-wall may represent the entrance to the N. guardroom, but excavations carried out on the N. side of the N. pier proved that there were no remains of a structural character at that point. Instead there was a very compact metalling composed of broken rock and clay giving a maximum thickness of 2 feet, and its surface was carried to the level of the base of the pier-stone. If a guardroom existed then it must have been of smaller dimensions than those usually found elsewhere in Romano-British forts.

A much more extensive exploration of this structure is needed. We did all that was possible in the conditions.

Strata overlying structural remains. The stratification over the foundations of the gateway was similar to that in the N. cut through the rampart. Below the top soil were three uneven strata, defined as follows:—

1. This, the upper stratum, consisted for the most part of broken masonry and tiles. The latter chiefly at the lower level, and the legionary stamps (Pl. XXI) found on them were of four types (1, 3, 5 and 6), datable to the late second-early third century.

2. Bone layer. This deposit followed more or less the irregular contour of the structural remains: the matrix was blackish in colour and consisted of silt and fine charcoal, with fragments of the shells of the common garden snail (*Helix aspersa*), a little mortar, and finely comminuted tile fragments. It was literally packed with bones of the long-faced ox (*Bos longifrons*), more especially so on the E. half, where between forty and fifty scapulæ of this animal were found. The presence of so many bones of the same kind is puzzling, all the more so as none shows any trace of having been punched or pierced for use as buttons

or counters. The only other bones of the ox found in this deposit were two lower jaws. Of pottery two types of vessel were represented: Collingwood's forms 30 and 44.¹ Both forms are commonly met with in Antonine deposits elsewhere in the Deanery Field. Neither has, so far, been found in the earlier deposits.

3. A thin layer of greyish loam. The only objects found in this were a number of loose black and white tesserae, both kinds from the Lias formation, the paler examples closely resembling the Liasic rocks of Warwickshire and parts of Somersetshire. Tesserae of both kinds were used in the mosaic floors of the colonnaded building on E. side of Bridge Street.²

The road leading to the gateway (Pl. XXIV). The maximum width of this was ascertained at one point only, and that in a small section opposite the S. end of block F, where the width measured 15 feet, which is about 2 feet 4 inches more than the maximum width of opening to the gateway. The metalling of the road on the N. side consisted of boulders and broken sandstone. A few fragments of pottery were found in this, including one of a cooking-pot of rustic ware.

THE BARRACK BLOCKS

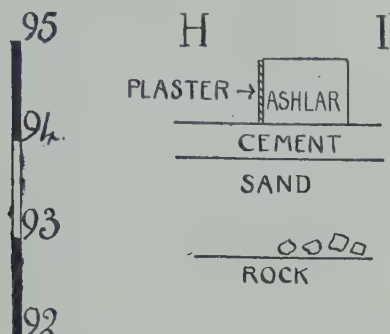
Block A (*Centurions' quarters*) (Pls. VI-VII, 1 and 2; VIII, 3; Text Fig. 4).

Room No. 1. The floor of *opus signinum* was composed of good hard mortar with a free admixture of broken sandstone and tiles; the latter chiefly at the top, and with them a rather sparse sprinkling of crystals of calcite. The make-up of the floor beneath the cement cap consisted of sand with a few odd pieces of unhewn sandstone. In it were three post-holes, many meat bones of the ox, a few broken shells of the common mussel, a little charcoal, and many fragments of late Flavian pottery. Among the last named were several pieces of Samian ware, including forms 18 (small), 29 and 67 (Pl. XI, p. 30, Nos. 4 and 5). The coarse ware vessels were also characteristic of the same period.

The cement floor had been carried in a thin layer over the rubble footings of the outer (E.) wall in two well-defined places. It would seem,

1. Collingwood, *Archaeology of Roman Britain*, pp. 224, 227.
2. Cf. *Chester Journal*, XXVII, p. 117.

therefore, that both structures were laid down at the same time and should, therefore, be equated.

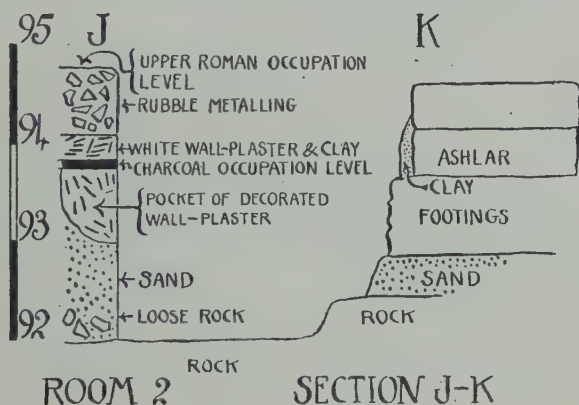


ROOM 1 SECTION H-I

Fig. 4. Of. Pl. XXIV

Room No. 2. The whole of the floor of this room was explored. In section (Text Figs. 5 and 6) the strata were :—

(a) Sand. The make-up of the primary floor was of sand with many pieces of unhewn sandstone, giving an average depth of 1 foot 9 inches.



ROOM 2 SECTION J-K

Fig. 5. Cf. Pl. XXIV

It was capped with a thin layer of charcoal containing a fair proportion of broken shells of the common mussel (*Mytilus edulis*). The pottery found in this layer is clearly datable to the late Flavian period. It included several pieces of the Samian form 18, the small cup, form 22 (Pl. XI, Fig. 10), and representative fragments of two rustic ware cooking-

pots (Pl. XVI, Fig. 67), etc. Also some pieces of a pillar moulded glass vessel, window glass, and a glass flask.

(b) A pocket of decorated wall plaster (Pls. IX and X) and a thin layer of plain plaster, the latter extending from the upper edge of the pocket over practically the whole of the floor area. This layer of plaster was covered with sand to a maximum depth of 3.5 inches, but the sand was much thinner or entirely absent over the central area of the floor, and was capped with a thin occupation layer of charcoal.

(c) Wall plaster and clay. This formed a layer averaging 4 inches thick. The plaster was undecorated; and the clay, which formed about

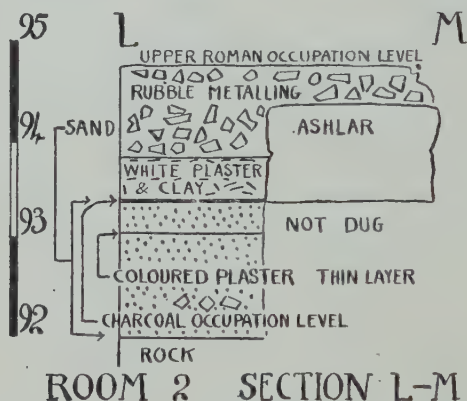


Fig. 6. Cf. Pl. XXIV

an equal moiety of the deposit, was in most cases firmly attached to the back of the plaster. Similar clay was also found attached to the face of the N. party wall, and may have served as a foundation for the final coat of plaster which had been stripped off when the building was destroyed.

The neck of a flagon (Pl. XV, Fig. 33) was found embedded in the layer of clay and plaster, but this, unfortunately, does not admit of very close dating. Its two-ribbed handle, however, is suggestive of the Antonine period.

(d) The upper Roman stratum. This formed a continuous layer over the floor and also the structural remains, and was characteristic of the conditions found elsewhere over the greater part of the explored area.

Room No. 3. This room had a sand floor capped with charcoal in a line with the top of the footings. Charcoal was also present in a very thin, broken layer at a lower level. In the NE. corner was a small

rectangular sink measuring 15 by 11 inches (Pl. VIII, 3). The sides of this structure were formed by four blocks of roughly dressed sandstone and the bottom with a badly cracked roof tile. For what purpose it served is not clear. No drainage led from it, but the sand floor may have served as a soak-away.

The footings to the N. party wall of this room were capped with clay and a thin bed of mortar.

Room No. 4. There were two walls on the N. side of this room, separated by a very narrow space or cavity varying from 17 to 14 inches. That on the S. had two short returns projecting into the room, 7 feet 9 inches apart; the inner face was composed of ashlar blocks, the back rough and irregular. The other wall formed the true division between rooms 4 and 5, and there was a small patch of white plaster on the S. face of it.

The make-up of the floor was of sand, and it was capped with a rough pitching of broken sandstone.

Room No. 5. The floor of this was of sand. A very narrow cut was made along the inner face of the E. retaining wall.

North end of block A (Pl. VI, Fig. 2). At this point there was an outcrop of sandstone rock (*b*). A chase had been cut into it for the reception of the footings (*a*), and another for the construction of the drain (*c*).

The drain (Pl. VI, Fig. 2, and Pl. XXIV). A section 15 feet 3 inches long was explored. It had an average depth of 2 feet 11 inches and a width of 1 foot 10 inches. The sides were built of well-dressed blocks of sandstone, and the top was covered with great unhewn blocks of the same kind of material. Many of the latter had collapsed and fallen to the bottom. In the 15 feet uncovered here the fall from W. to E. is only 8 inches, or 1 in 22. In the part excavated in 1928¹ the fall was 1 in 15; while, if we take the 75 feet between the westernmost point and the easternmost point investigated on the N. side, there is a fall of 3·5 feet, or 1 in 21·4. There is a difference of 12·3 feet between the bottom of the westernmost point on the N. side and the bottom of the section found on the E. side 100 feet further south and 27·5 feet further east. This gives an average fall of 1 in 30 over the distance of 375 feet.

The material finds from the infilling consisted of the following: A

1. *Liverpool Annals*, XVIII, p. 14, Fig. 3.

mortarium rim datable to the third century, a fragment of a Samian bowl, form 37 (Flavian), and several pieces of a dish, form 36. In addition to the pottery there were many fragments of roof-tiles, part of the upper jaw of a horse, and a long bone (manus) of the red deer.

Blocks D, E and F (Pls. V, Figs. 1 and 2 ; VIII, Figs. 1 and 2).

Two narrow cuts were made through these blocks. That on the N. (Pl. XXIV) intersected the party walls in block F ; that on the S. the party wall of blocks D and E. The floor in the larger room of block D was well preserved ; the make-up of this was of sand and it was capped with rough blocks of sandstone. Under the latter was a small dish of buff-coloured ware very similar to that illustrated on Pl. XV, Fig. 48, and, like it, to be attributed to the late Flavian period. In the floor of the smaller front room was a flagon (Pl. XV, Fig. 32).

Block E.

The floors which were intersected by our cuts were both of sand.

The verandahs to blocks E and F and road between them (Pl. XXIV). The metalling of the road between these blocks was of poor quality consisting of a rather thin layer of soft and finely broken sandstone. No datable objects came from it. The post-stone for the support of the verandah on the W. side consisted of a large, flat unhewn block of sandstone ; it rested on a foundation of finely broken rock and sand, in which were found several fragments of pottery including that of the Samian form 37 (Pl. XI, Fig. 2) with the godroon design in the lower half of the vessel.

Block F (Pls. V, Figs. 1 and 2 ; VII, Fig. 4).

The smaller (W. side) of the two rooms at the N. end of this block had a cement floor. The make-up of this was of sand with a foundation of broken roof and ridge tiles, chiefly the latter. All the other floors in this block were of sand. The narrow cuts made through the floors yielded comparatively little pottery, or other small material finds ; and the capping of charcoal, so well defined in the blocks on the W. side of the field, was here barely traceable. Apparently there was a less intensive occupation of this block than in blocks A and B.

In plan (Pl. XXIV) the structural remains are like those in blocks A and B. Fortunately we were able to explore the S. end of the block, which shows that its general lay-out at that point was similar to some

of the barrack blocks at Neuss¹ in having the wall at the end carried through to the verandah. The W. (front) room at the south end was divided into two small compartments, the southernmost having a well-built drain of sandstone running through it E.-W.

EARLY COARSE POTTERY

RAMPART BUILDING, ABBEY GREEN (GROUP I)

Plate XIV

1. Cooking-pot in soft buff-coloured clay with a few quartzite particles in the matrix. It is smoked externally in patches by the action of fire, presumably after baking in the kiln. Below the cement floor, room No. 2.

2. Cooking-pot in hard, fumed grey clay with a few quartzite particles in the matrix. Rim oblique, and with a shallow groove externally. Girth-groove just above the shoulder; there are faintly burnished bands below. Below the cement floor, room No. 2.

There were also many fragments of another vessel of this type.

3. Cooking-pot in hard, fumed grey clay. Rim heavily moulded. 'Bank' against inner face of outer N. wall.

4. Rim fragment of cooking-pot in hard, fumed grey clay, burnt in places to dusky buff. Rim thick, angular. Sand floor, room 3.

5. Cooking-pot of hard, orange-red clay, smoked on the exterior. Rim oblique, angular in section, and relatively thin in comparison with the body-wall.

6. Rim fragment of pot in fine, hard orange-red clay. Rim heavily beaded and strongly incurved, the surface below the grooves finely tooled. This distinctive class of vessel in its complete form is illustrated in a former report.²

5-6. Packing against N. face of N. wall. Here also were four rims of typically first-century forms which are represented in the series obtained in 1934.²

7. Small beaker in fine, hard grey clay. Rim oblique, girth-groove above shoulder, and traces of widely spaced rouletting below it. Sand floor, room No. 3.

1. *Bonn. Jahrb.*, CXI, Pl. III.

2. *Liverpool Annals*, XV, Pl. XIII.

8. Small beaker of yellowish-white clay, coated with a pale olivaceous, metallic glaze, with traces of a fine rough-cast zone below the shallow girth-groove. Sand floor, room No. 3. A close parallel to this has occurred at Caerleon; there dated as Flavian.¹

9. Neck of small urn in reddish-buff clay internally, but externally fumed grey, shading to buff-grey; an angular wavy line between girth-grooves.

The clay bears a striking resemblance to that of the cooking-pot (No. 1) found under the cement floor in room No. 2. Furthermore, the acute wavy line also resembles that on the reeded rim of the bowl No. 17. Packing against footings, E. face of E. wall.

10. Pot or beaker of very fine dull red clay, with a very smooth surface. Rim small, oblique; foot-ring well formed, base beneath concave and with a sub-marginal groove. Three widely-separated girth-grooves, and a group of three white circles enclosing small white dots applied *en barbotine*. There seem to have been three groups of circles, but two are missing. N. face of N. wall, with late Flavian pottery.²

11. Small beaker in buff-red gritty clay. The rim is almost vertical. Packing N. face of N. wall.

12. Small beaker in fine, hard red clay, coated with orange-red slip, probably in imitation of Samian ware. N. face of N. wall.

13. Flanged cup in fine buff clay, much damaged by the action of fire. Below the cement floor in room No. 2.

14, 15. Rim fragments of carinated bowls in red clay. Rims plain. 'Bank' against inner face of outer N. wall.

16. Rim fragment of carinated bowl in fine, hard fumed grey clay. Lower sand, below the cement floor of room No. 2.

17. Carinated bowl with the sides softened almost to a curve. Rim (inset) reeded and with a rather angular wavy line. Side above the carination with two wavy lines separated by horizontal grooves. Very hard fumed grey clay with a few quartzite particles in the matrix. This is an exceptionally heavy thick-walled example, and the decoration of both rim and side unusual. Below the cement floor, room No. 2, with the cooking-pots Nos. 1 and 2, etc.

18-20. Rim fragments of carinated bowls. Packing N. face of N. wall.

1. Nash-Williams, *Arch. Camb.*, Dec. 1932, No. 301.

2. For a similar type of vessel cf. *Liverpool Annals*, XV, Pl. XIII, 11a.

21. Large shallow dish in brick-red clay. Sides strongly recurved; interior finely tooled, with a step at the junction of the side with the base. Part of a bronze sheath for a *dolabra* was found in association with this vessel. N. face of N. wall.

DEANERY FIELD (GROUP II)

Plate XV

Early coarse pottery from well-stratified deposits.

22. Mortarium. Clay pale red, coated with buff-cream slip. Grit chiefly white quartzite, with a few pieces extending to the rim. Bushe-Fox's type No. 14,¹ which 'hardly appears to last into the second century.'

Block A, room 4.

23. Mortarium. Fine brick-red clay, thinly coated with a slightly paler coloured slip. Grit white; none extends to rim.

Gateway: from the make-up below the paving.

24. Mortarium in fine, hard brick-red clay, with brown and white grit in interior, none extending to the rim. Upper surface thinly coated with buff-cream slip. Closely resembles Bushe-Fox's type 58, but rim slightly more bent down.

Block A, room No. 3, with late Flavian pottery.

25. Mortarium. Red clay with a greyish core, thinly coated with cream-coloured slip. Rim nearly flat-topped, with a very shallow groove on upper surface near lower edge; the inner bead large, and not projecting above the rim.

Block A, outer face of footings, E. side.

26. Mortarium. Red clay with dark haematite wash. Grit extending to rim.

Block A, outer face of footings, E. side.

27. Mortarium. Pale brick-red clay coated with cream slip. White grit extending to top of rim. Near Bushe-Fox's type No. 22, dated 80-110 A.D.

Gateway: in the upper floor.

28. Mortarium. Hard, pale brick-red clay, with dull orange-red slip.

Block F, sand floor.

29. Mortarium. Rim flat-topped with a deep angular groove below the inner edge. Hard red clay, coated with brighter red slip. White

1. Bushe-Fox, *Wroxeter*, 1912.

quartzite grit extending to the rim. Type belongs to the Holt series Nos. 5-8.¹

Block F, footings.

30. Flanged bowl of egg-shell ware. Clay white, very brittle, and seems to have been coated with pinkish-white slip. This form is represented in the Holt collection at Cardiff.²

Block F, in the sand floor.

31. Small cup imitating Samian forms 24/25. Pale buff clay, with a finely tooled and smooth surface.

Block A, in the sand floor of room No. 3.

32. Two-handled flagon in pale brick-red clay; outer surface much pitted and shaled off owing probably to long exposure to frost. Rim flat, angular in section; body bulbous, and almost angular at the bulge.

Block D, in sand floor of the small 'front room.'³

33. Neck of flagon in fine brick-red clay, coated with white slip. Rim somewhat angular in section, but strongly concave on under surface. Between the rim and the two-ribbed handle is a shallow cordon. A close parallel to this is given by May as a Belgic imitation of an early type, but not dated.⁴ The two-ribbed handle is suggestive of a second-century date. From the upper stratum of plain wall plaster and clay, into which it was firmly embedded.

Block A, room No. 2.

34, 35. Carinated bowls. Small types. Both in fine brick-red clay.

Block A, under cement floor.

36. Carinated bowl. Small type, similar to No. 40. Hard orange-red clay. Rim plain. Carination sharply defined; three fine grooves midway between rim and angle.

Block D, in sand floor.

37. Rim fragment of carinated bowl in hard grey clay, with well-marked step on under side of rim, but without grooves on upper surface.

Block A, in floor of room No. 1.

37a. Red clay and a reeded rim.

In same deposit as 37.

38. Carinated bowl. Red clay, plain rim.

1. Cf. Grimes, *Holt.*, p. 146.

2. *op. cit.*, p. 172.

3. Cf. *Liverpool Annals*, XVIII, p. 121, No. 15a.

4. May, *Colchester*, p. 111, Pl. XL, 126.

Block A, floor of room No. 3.

39. Carinated bowl. Coarse red clay. Rim plain.

Find spot as No. 40.

40. Small carinated bowl. Fine brick-red clay. Rim plain and slightly oblique; foot-ring shallow but distinct; a fine girth-groove just above the carination.

Block F, in packing against the footings on the E. side.

41, 42. Carinated bowls. Both in brick-red clay, with reeded rims.

Block E, in N. cut.

43, 44. Carinated bowls in hard, fumed grey clay. Rims reeded.

Block A, room No. 2, in sand floor below layer of decorated wall plaster.

45. Open rimless dish, in fine pale red clay.

Block A, under cement floor of room No. 1.

46. Similar to No. 45, but with shallow step at union of side with base.

Same find spot as No. 45.

47. Shallow dish with quarter round fillet and a fine groove in the interior. Clay very hard brick-red, and both surfaces coated with buff-cream slip. Form apparently not represented in the Holt collection at Cardiff; evidently derived from the Samian platter 15/17, though there is no indication of the external fluting so characteristic of those early types.

Gateway: in upper floor.

48. Shallow dish with incurved side, and well-formed though shallow foot-ring. Clay pale orange-red.

Block F, footings at N. end.

49. Shallow dish with inwardly curved sides. Fine, hard orange-red clay, finely tooled in rather broad flattish zones, and smoked in places by the action of fire. Resembles the Holt type No. 134.

Gateway: from make-up of road below paving.

Plate XVI

50-54. Hemispherical bowls evidently derived from the Samian form Drag. 37. All four examples are but slight variants of Grimes' type 22,¹ characterised by 'cutting away the wall of the vessel to form the rim and the girth-beads.' Nos. 51, 52 and 54 are in fine orange-red clay coated

1. Grimes, *op. cit.*, p. 172.

with haematite slip, and No. 53 in darker coloured clay and slip and slightly burnished.¹

All four examples from Block A.

55. Part of rim and handle of a large flagon. Fine, non-gritty orange-red clay with a scanty coating of mica on upper surface. Handle faintly three-ribbed. The fragment seems to belong to a vessel of a type figured by May.²

Block A, room No. 2, in the stratum with the decorated wall plaster.

56. Cooking-pot. Hard fumed grey clay. Girth-groove at shoulder.

Block F, footings at N. end.

57, 58. Cooking-pots. Rim fragments of two vessels in hard fumed grey clay.

Block A, Room 2, in stratum with coloured wall plaster.

59. Cooking-pot. Hard, dull orange-red clay. Rim very oblique; two girth-grooves at the shoulder.

Gateway: from make-up below paving.

60. Store jar or the like. Dull buff clay, with grey exterior. Found with the coin of Domitian, COS. XIII; in N. cut through rampart.

61. Store jar. Fine, hard pale red clay; coated with bright haematite slip inside and a paler red wash outside.

Block A. From packing against footings at S. end.

62. Small beaker in fine brick-red clay, discoloured by the action of fire.

63, 64. Cooking-pots. Rim fragments of two vessels, No. 63 in red clay, No. 64 in fumed grey clay.

65, 66. Cooking-pots. Rim fragments of two vessels.

67. Cooking-pot in fumed grey rustic ware. Rim oblique and heavily beaded.

68. Cooking-pot or beaker in fine fumed grey ware. Rim oblique, girth-grooves at shoulder and just below the bulge; surface between finely tooled.

63-68. Block A, room 2, in stratum below decorated wall plaster.

69. Cooking-pot. Dull red clay, exterior smoked. Rim squat, and obliquely curved. Girth-groove at shoulder.

Gateway: from lowest stratum.

1. Cf. *Liverpool Annals*, VIII, Pl. VIII, Nos. 2, 3, p. 57.

2. *Colchester*, p. 111, Pl. XL, No. 125.

70. Cooking-pot similar to No. 78, but larger, with a rather angular rim.

There were two rim fragments of this vessel, and both of them had been incorporated in the foundations of the cement floor.

Block A, room No. 1.¹

71. Cooking-pot. Hard fumed grey ware. Rim oblique, with upper surface hollowed out.

Road metalling between blocks C and D.

72. Rim fragment of cooking-pot in hard grey clay.

Block A in sand floor of room No. 3.

73. Store jar. Coarse red ware, with stumpy oblique rim.

With 71.

74. Cooking-pot. Fine fumed grey clay, stained ferruginous on both surfaces, due it may be to contact with iron. The barbotine decoration of slightly darker colour consists of vertical rows of large circles, alternating with broad vertical bands of pyriform blobs.

Found with a coin of Domitian, COS. XIII; in N. cut through rampart.

75. Cooking-pot. Hard fumed grey clay. Rim oblique, hollowed on its outer face.

Block F, footings.

76. Cooking-pot. Hard fumed grey ware. Rim squat, strongly beaded. Girth-groove at shoulder.

Block F, sand floor.

77. Rim fragment of beaker in fumed grey clay. Rim oblique, rather short; girth-groove below.

Block A, in sand floor of room No. 3.

78. Cooking-pot in fine, hard brick-red clay. Rim oblique, a deep girth-groove just above the shoulder.

Block A, room No. 1.

79. Cooking-pot. Brick-red clay. Rim angular, a deep groove at the shoulder.

Block F, footings.

80. Pot lid in fine orange-red clay. This form, with its slightly up-turned edge, occurred in the early deposits elsewhere in the Deanery Field.

Block A, floor of room No. 1.

1. For complete vessels of this type cf. *Liverpool Annals*, XV, Pl. XIII, 10a, 12a.

COARSE POTTERY (GROUP III)

Plate XVII, Nos. 81-110

All the pottery included in this section came from the upper Roman stratum (see above, p. 5) which covered the structural remains in practically all the explored portions of the Deanery Field.

MORTARIA

81. An almost flat-topped rim with shallow bead. Fine red clay with buff-pink slip mica coated. Late first-early second century.

82. Fine buff clay. Near Bushe-Fox's type 54, dated 80-110 A.D.

83, 84. Red clay coated with haematite slip. These are slight variants of Bushe-Fox's type No. 78, dated at Wroxeter, 90-120 A.D.

85. One of a series of five examples, all in coarse red clay, one coated with haematite slip. All are slight variants of Bushe-Fox's type No. 106, from Corbridge, where 'they appear to occur in the latter part of the second and in the third century.'

86-90. Hammer-headed types, all in hard white clay. No. 86 decorated with broad bands of dull orange-red slip; No. 90 with a series of wavy lines in dark red slip arranged in groups obliquely across face of rim. These may be dated to the third and fourth centuries.¹

COOKING-POTS

91-95. All in fumed grey ware with burnished lattice lines at sides. Those forms with cavetto rims (93, 95) were very common, but No. 91 less so.

96. Also in fumed grey ware, but distinguished from the foregoing by the marked step or sharp ridge on the underside of the rim.

97, 98. Fumed grey-black ware with a free admixture of shell particles. In all there were five examples of this class of ware. Close parallels are recorded by Wheeler.² The fabric is rare at Chester, where it has been previously found in association with late fourth-century ³ coins.

1. Bushe-Fox, *Wroxeter*, 1912, p. 79.

2. *Segontium*, p. 167, Nos. 42, 43.

3. *Liverpool Annals*, XI, p. 73, Nos. 1, 2.

99. Conical flanged bowl in fumed grey-black ware with dull polished surface. This form has not occurred in the early deposits on this site, and is somewhat sparsely represented in the latest (upper) stratum. Collingwood¹ states that it is 'exceedingly rare in the second century,' but 'common and remains common in the fourth.'

MORTARIA CLASS

100. Vessel with heavily moulded rim, overhanging on both sides of the wall. Rather coarse dull red clay.

101. Resembles a small mortarium in its form of rim, but there are no grit particles on the interior. Fine pale red clay completely coated with buff slip. Two examples.

FLANGED BOWLS

102. Technique excellent and surface tooled. Fine red clay coated with buff slip.

103-105. Like the preceding these are imitations of Drag. form 38, but larger and of coarser technique. No. 103 is in pale red clay with an external groove just below the rim. No. 104 has a heavily beaded rim and the red clay is coated with buff slip. Of No. 105 there are three examples, in which clay and slip are similar to No. 104.

PIE-DISHES

106. Flanged dish. Grey-black clay with dull polished surface. Sides curved and decorated with a crudely executed trellis pattern, the base with a looped scrawl.² This was the commonest type of pie-dish found in the upper Roman stratum; and the period of its greatest incidence seems to have been towards the end of the second century.

107. Dish with very shallow bead-rim and trellis pattern at the side. Ware grey-black with dull polished surface. Eight examples: four decorated, the others plain.

108. Dish similar to the preceding, but with beadless rim, base slightly chamfered, side decorated with a crudely fashioned wavy line. A close parallel to Collingwood's No. 41.³ There were four more examples with beadless rims: three decorated with trellis pattern, one plain.

1. Collingwood, *op. cit.*, p. 224, No. 30.

2. Cf. *Liverpool Annals*, XVIII, Pl. XLV, 42b.

3. Collingwood, *loc. cit.*

CASTOR WARE

109, 110. This kind of fabric seems to be extremely rare in the Roman deposits in Chester. Our recent finds consist of fragments of five vessels only, viz. (1) the base of a small beaker with thickened base and beaded foot; (2) rim and side fragments of two small cups; (3) the rim of a vessel of the mortaria class, No. 110; and (4) a fair section of a shallow dish with thick walls and beadless rim, No. 109.

POTTERY: MISCELLANEOUS FORMS

Plate XVIII

1. Fragment from the lower portion of (probably) an imitation of the Samian form 29. Clay fine orange-red, outer surface with traces of haematite wash, and closely rouletted. It belongs, apparently, to Grimes' class of vessel, Nos. 227 *a-f*,¹ to which no certain date is attached.

Block A, unstratified top soil.

2. Fragment of small beaker or bowl, the whole surface rouletted in horizontal bands of small rectangular panels enclosing comb-like *motifs* with oblique teeth, others with two, unequal sized ringlets. Clay orange-red, outer surface coated with dull buff slip.

Block A. Upper Roman stratum. Probably Antonine.

3. Fragment of small Samian bowl, form 37, with three narrow bands of rouletting. Glaze dull orange-red, very thin and very soft. Probably late second-early third century.

Block A. Upper Roman stratum.

4. Rim of incense-bowl. The frilling pattern, made with the finger, is of excellent technique. Clay brick red, coated with cream slip.

Block A. Upper Roman stratum.

5. Fragment of cooking-pot of rustic ware, in hard fumed grey clay. Probably late Flavian.

Block A. Top soil, unstratified.

6. Fragment of small beaker in hard grey ware, decorated with small studs *en barbotine*. Probably late first-early second century.

Top soil, unstratified.

1. Grimes, *op. cit.*, p. 172.

SAMIAN WARE (*Terra Sigillata*)

Plates XI-XIII

1. Form 29. Fragment from lower zone with part of cruciform ornament.

Block A, footings at S. end.

2. Form 37. Decoration in two zones divided by a wavy line. Upper zone with chevron-like groups of large divergent leaves (incomplete), alternating with a figure of Eros (Déch. 268). Lower zone with rather widely separated godroons. The decoration of the lower zone with godroons is unusual. Oswald and Price¹ state that 'this *motif* was only very exceptionally transferred to Flavian examples of form 37. . . . The godroon is indeed of infrequent occurrence on sites which can be definitely referred to the reign of Domitian . . . such as the fragment recorded by Curle from the Fort of Newstead, and three pieces from Corbridge illustrated by Bushe-Fox.'² Nash-Williams³ adds another record from Caerleon, there dated as Flavian.

Block E. Under post-stone to verandah.

Dr. Felix Oswald, to whom the fragment was submitted, has added the following interesting details regarding the decoration: 'The Eros is Déchelette's type 268. It occurs more often on 29's; e.g. **OF IVCVN**, London (London Mus.); **FRONTIN**, London (Guildhall Mus.); **OF MODESTI**, Silchester; **VANDERIO**, Rome (Knorr, T.S. 1919, 80E.); **OF PASEN**, London (Guildhall); **OF VITAL**, Günzburg (Bencker, Günzburg, No. 107); **VITALIS**, Nymwegen (Knorr, T.S. 1919, 83M.). But it is also on 37's of Flavian (**MIIMORIS**, Pompeii, Atkinson 74) and especially of Domitianic age in the style of Biragillus and Mercator (Knorr, Rottweil 1912, XXVIII, 2; Rottenburg I, 6, 11, IV, 12); and in the Mercator style in the Bregenz cellar. Furthermore, the double-ended godroon and chevron wreath also occur on 37 of Mercator style (Knorr, Canstatt 1905, XI) from Rottweil; and the double-ended godroon on 37's at Pompeii (Atkinson, 40, 53). So I should feel inclined to regard this and also the piece found with your 18 by Masclinus (see p. 31) as Domitianic and in the style of Mercator.'

1. Oswald and Price, *Terra Sigillata*, p. 73.

2. *Arch.* 64: 27, 29, 30.

3. *Arch. Camb.*, 1932, p. 280, No. 80.

3. Form 37. Fragment of lower portion. Part of medallion enclosing eagle (Déch. 982, La Graufesenque) and part also of large scroll ; between them a sitting hare (Déch. 954. Volus[envs]) under a large rosette. Large S-shaped ornament below, with wavy line above it.

Block A. Footings.

4. Form 29. Fragment from lower portion with cruciform ornament composed of wavy lines and tendrils, tied at the corners with rosettes ; on the left a demi-festoon of conventional leaves enclosing part of a large medallion.

Block A, room No. 1, under the cement floor with Nos. 5, 8, etc.

5. Form 67. Part of lower portion. The chief *motif* in the decoration may represent a quadrilateral group of acanthus leaves, from the centre of which are two pairs of incurved conventional leaves or the like, and to the right of these are several small rosettes ; a simple tendril passes upwards from the base of the group on which a small bird is perched.

Block A. With the preceding.

6. Form 37. Part of a large scroll with the tendrils terminating in large serrated leaves ; the lower cavities each with parts of an animal (dog ?) to left and right, respectively ; below them a wavy line and a narrow wreath as in Walters' (*B.M. Cat.*) No. 33.

Block A. Footings.

7. Form 37. Fragment from lower portion with swan (not in Déch.) to r., a horizontal wavy line and below this large pinnate leaves.

Block A, footings near N. end.

8. Small fragment of form 37. Glaze good but rather dull. Ovolo with a three-pronged tongue. Part of panel decoration below, divided by blurred wavy lines, tied at the corner with a badly blurred rosette.

Rampart building, near base of ' bank ' in room 2, with the stamp of Masclinus (No. 11, below).

This fragment was submitted to Dr. Felix Oswald, who states : ' The three-pronged ovolo is quite characteristic of Mercator and Biragillus of Banassac and may quite well belong to your bowl No. 2 (above), and I feel inclined to regard it as Domitianic in the style of Mercator.'

9. Imperfect rim fragment : mortarium class of Samian ware, near the form from Gellygaer.¹

Block A. Under cement floor.

1. Oswald and Price, *op. cit.*, LXXI, 17.

10. Form 22. Rather small. Side externally faintly convex between the shallow bead-rim and the foot-ring. Though smaller it is very like the example from the Fort of Newstead.¹ Glaze orange-red and rather poor.

Block A. In the sand floor of room No. 2, with pieces of rustic ware, cooking-pots, etc.

11. OF **MASCLIN**. On a large form 18, with brilliant glaze and fine technique. The stamp surrounded by a broad circular groove; a rouletted circle immediately above the foot-ring. Off-set outside strongly marked, inside barely traceable. Rim well formed, well-defined groove on lip.

Rampart building, near base of 'bank' in room No. 2, in association with No. 8. Dr. Felix Oswald writes: 'As to the fine 18 of Masclinus I am inclined to regard this as Flavian and possibly Domitianic. Although the external set-off is (as stated in our book) more usual in the early than the later forms, I do not think a very strict chronological significance can be attributed to it, but the shape of the stamp with its nearly swallow-tailed ends is more usual in earlier bowls, *e.g.* of Aquitanus. Even so I should vote for a Domitianic age, both pieces being contemporary.'

SAMIAN FROM UPPER ROMAN STRATUM

Plate XII

12. Form 37. Part of panel decoration divided by bead-rows, tied at the top with an astragalus. Eros (near Déch. 240), seated with left arm raised (offering food?) to a stag, the latter with humpy forehead as in Déchelette 867. In the field are three conventional, branch-like *motifs*.

Dr. Felix Oswald has kindly given the following information:— 'The Eros seems to me to be identical with the Blickweiler type 73, and occurs at Blickweiler on 37 with the small **CD** monogram. But your specimen is, I am sure, Lezoux ware, on which the same **CD** is associated with the stamp of Austrus. I have no doubt Austrus migrated to Blickweiler from Lezoux and there turned out much pottery with the **CD** monogram and his types. Your deer is certainly Déch. 867, as you state, and this deer is used by **CRICIRO** of Lezoux, and on his bowls

1. Curle, *A Roman Frontier Post*, Pl. XXXIX, 12.

with CR (as at Maldon), but also on a bowl stamped OFATT (retro.) at London (Guildhall Mus.). I have considered this to be ATTIVS, but it is quite possibly ATTIANVS as Stanfield suggests, and their style is quite similar. On this 37 OF ATT (retro.) of London very similar conventional leaves occur to your example. So I quite think your bowl was by the same potter.¹

13. Form 37. Free style decoration : (1) horseman near Déch. 1056, but smaller ; (2) stag (Déch. 852, *in the text*¹), used by Cinnamus and Doecius ; (3) stag at rest (Déch. 848).

14. Form 37. Free style decoration. Dull glaze, *motifs* somewhat blurred. Ovolò with corded tongue and rosette terminal, wavy line below : (1) Lion to left, resembling Déch. 758, but much larger ; (2) Apollo (Déch. 165) with lyre ; (3) in the field large trifoliate *motifs*, two of them arranged in pairs with their bases united.

15. Form 37. Poor dull glaze. Ovolò with corded tongue. Decoration : (1) part of large medallion enclosing cantharus (probably Déch. 1074), and in the angle above a small ring ; (2) part of panel divided by a vertical bead-row ending in a very small ring, an acanthus leaf to the right.

16. Form 37. Part of large medallion enclosing stag (Déch. 874), with detached leaf *motifs* in the field.

17. Form 37. Part of medallion with lower part of hare (Déch. 950a) beneath a trifoliate leaf attached to a thick corded stem.

18. Form 37. Decoration in panels and large medallion : (1) part of draped female (Déch. 538 ?) ; (2) vertical bead-row ending with a large rosette ; (3) medallion of cable pattern, enclosing bird with wings displayed, similar to Déch. 1010, but smaller and of much better technique.

19. Form 37. Part of panel decoration from the lower portion of the vessel : (1) astragalus ; (2) dolphin (not in Déch.).

20. Form 37. Large medallion enclosing a sitting hare (Déch. 950a). Cinnamus, Doecius.

21. Form 37. Part of panel decoration divided by bead-rows. Ovolò large and angular, tongue corded ; bead-row below it : (1) upper part of panel with festoon tied at the corners with an astragalus, and enclosing fish (tunny ?) with trilobed tail ; (2) part of large panel enclosing Apollo (Déch. 56).

1. The illustration to this is numbered in error 845.

Dr. Felix Oswald, to whom a rubbing of this fragment was sent, writes as follows :—The fish is new to me and may be meant for a tunny. The Apollo is used by Lastuca, 37, **LASTVCA** (retro.) at Lezoux, in my collection; and the squared ovolo is characteristic of Laxtucisa—e.g. 37 of his at Wels (unpublished photograph by Weisinger, sent to me). I think Laxtucisa and Lastuca are probably variants of the same name, and I regard him as a Hadrianic potter.'

A fragment of a smaller and thinner walled bowl, apparently by the same potter, exhibits the same type of ovolo, and also a festoon enclosing the same fish *motif*.

22. Form 37. Part of panel decoration divided by bead-rows : (1) part of medallion enclosing fish to left (Déch. 1062) and used by Libertus and Butrio; in the angle below a small dolphin; (2) a single godroon; (3) a sitting hare (Déch. 950).

Probably Trajan-Hadrian.

Plate XIII

23. Form 37. Panel decoration divided by heavy bead-rows : (1) Hippocampus (Déch. 33), with an astragalus at the angle; (2) figure subject (Déch. 344 ?); (3) two acanthus leaves.

Trajan-Antonine.

24. Form 37. Panel decoration divided by large angular wavy lines : (1) part of dolphin within a large foliate festoon; (2) draped male figure (Déch. 523).

Antonine.

25. Form 37. Panel decoration divided by bead-rows : (1) part of small mammal, probably bear; (2) bear (Déch. 820); (3) fighting cock (Déch. 1025). All the *motifs* are badly blurred, and the glaze very poor.

26. Form 37. Large bead-row below ovolo. Portions of two large medallions; between them a cone on a pedestalled vase with an astragalus across the stem of the latter; in the field on either side a lozenge-shaped shield.

Antonine.

27. Form 30. Ovolo border with a faintly lobate tongue; a fine bead-row below. Two *motifs* only are represented : a trifoliate leaf, and a leaf with unilateral serrations.

Antonine.

28. Form 37. Panel decoration divided by bead-rows : (1) lower

panel with boar (Déch. 834), and below it an astragalus; (2) draped male figure (Déch. 523), below a badly blurred mask, probably that of Déch. 694.

Antonine.

29. Form 30. Free style decoration. Ovolo with a faintly lobate tongue, and below it a fine bead-row. Lioness to right, near Déch. 741; and branch-like *motifs* in the field.

30. Form 30. Bead-row below ovolo, with tongues ending in large rosettes. Part of the figure of Apollo (Déch. 55).

31. Form 37. Fragment showing part of large medallion and panel divided by bead-rows, ending with a small ring. Caduceus-like ornament within the panel.

Antonine.

32. Form 37. Part of large scroll, the tendrils ending in large and strongly lobate ivy leaves. Small rings just within the lower moulding.

Hadrian-Antonine.

33. Form 37. Part of large scroll, the tendrils ending in large vine leaves. Large rings in the spaces below. Style of Cinnamus.

Hadrian-Antonine.

34. Form 37. Part of triangular panel divided by bead-rows, enclosing large lobate ivy leaf as in No. 32, and a small bird (Déch. 1035).

POTTERS' STAMPS ON SAMIAN WARE

1. AV[. . . On 18/31.

2. . .]CALV[. On 18. Probably part of Calvus of La Graufesenque. Period Nero-Domitian.

3. . .]ILLI OF. On 18/31.

All three examples in a mixed deposit (English) over Roman level.

4. OF MÂSCLIN. On 18 (large).

Rampart Building. See above, p. 31.

5. OF F[. . . On 18/31. The first F is placed within the O.

6. . .]RONIS. On 18/31.

Top soil.

7. IVCVND. On 18 (small). The period for Secundus is given by Oswald¹ as Claudius-Flavian.

Block F. From the packing against the footings on the E. side.


1. Oswald, *Stamps on 'Terra Sigillata,'* p. 149.


8. . . .]M. On 37. The large bold letter below the decoration is characteristic of that in the stamp used by Iustus of Lezoux. Period Hadrian–Antonine.¹ The fragment was chipped down for use as a counter.

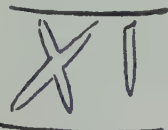
Block A. Upper Roman stratum.


GRAFFITI ON POTTERY


The few graffiti were all cut or scratched on the vessels after baking, and may represent the owner's name or mark. All are from the upper Roman stratum. Scale 1 : 1.

1.  Probably Sabin(us). On the underside of the base of a form 18.

2.  The numerals XX in monogram form, cut on the inside of the foot-ring of a form 18/31.

3.  The numerals XI cut on the rim of a pie-dish of grey-black ware.

4.  The numerals XIII, deeply cut with a file or the like, on the edge of the foot-ring of a form 18/31, bearing also the potter's stamp JILLIO OF.

5.  An arrow-shaped mark scratched on the base of a form 31.

GLASS

Flasks or Beakers. Fragments in varying shades of pale blue occurred very sparingly in the early deposits over the whole of the area explored, and one small piece of almost clear glass with applied thread decoration was found in the road-metalling between blocks C-D.

1. Cf. Déchelette, *Les Vases ornés de la Gaule romaine*, Tom. prim., p. 278; *C.I.L.*, XIII, 100111, 217d.

Pillar Moulded Vessels :—

(a) Fragments of bowls of the usual form, in pale blue, occurred in the first-century deposits on the sites named below: Block A, in the sand floor of room No. 2 (one piece); in the roadway between blocks C-D (one piece); under the post-stone to the verandah, block D (two pieces); and in the gateway (one piece).

(b) Fragment from the lower portion of a hemispherical bowl, with a narrow vertical pillar (not an applied thread) in a rich deep blue colour. From the sand floor of room No. 4, block A. Period late first century.

Unguentarium. Part of neck of a small example. Sand floor, room No. 1, block A. Late first century.

Window glass. Pieces datable to the late first century from sand floor, room No. 2, block A; three fragments from upper Roman stratum over same block. A few fragments were also found in the rampart building, datable to the first century.

'*Cut-glass.*' One small fragment of a cup of clear glass decorated with facets cut on the wheel.¹ Rampart building, with Flavian pottery.

MISCELLANEOUS OBJECTS

Plate XIX

1. Belt mounting of bronze with a stud at one end for attachment; an exact parallel to that found previously.²

Unstratified.

2. Pin of bronze with a spheroid head.

Unstratified.

3. Staple of bronze cut from a sheet of metal.

Unstratified.

4. Pin of bronze with part of flattened head missing.

Unstratified.

5. Part of fusiform pendant of bronze.

Unstratified.

6. Pendant of bronze decorated with four white enamel crescents and a central quatrefoil.

Block A. Upper Roman stratum.

7. Hair-pin of bone.

1. Cf. B.M. *Guide to Roman Britain*, p. 104, Fig. 123c.
2. *Liverpool Annals*, XVIII, p. 133, No. 31.

Block A. Upper Roman stratum.

8. Hair-pin of bronze; head chased with transverse grooves, and pierced for attachment of ring.

Gateway. Upper Roman stratum.

9-10. Studs of bronze.

Block F. Early deposits.

11-12. Buckles of bronze.

Blocks A and F. Unstratified.

13-14. Counters of bone decorated with concentric rings. No. 14 has a large X cut on the under surface.

Block A. Upper Roman stratum.

15. Strip of bronze, moulded in the form of a cable in miniature on convex outer surface.

Rampart (N. cut). Unstratified.

16. Plano-convex disc of lead, with an irregular concentric groove or channel cut with a chisel on its flattened surface.

Rampart building. Late first-century deposit.

17. Barbed and socketed implement of iron, c. 9 inches long. Found standing upright in the sand floor close to N. party wall of room No. 3, block A. Period late first century.

No parallel has yet been traced for this interesting find.

18. Nail of iron. This is an exceptionally large example, and although the point is missing, it measures 8 inches and weighs 8 ounces.

Rampart building. First-century deposit.

19. Remains of a javelin-like implement of iron.

Same deposit as No. 18.

Plate XX

Ballista Balls. All three are carefully cut from the local red sandstone. They are spheroid with a small flattened base. Weight when dry: 4 lbs. 6 ozs.; 2 lbs. 10 ozs.; and 1 lb. 11 ozs., respectively.

Upper Roman stratum. One shown *in situ*, Pl. VII, Fig. 3.

NOT ILLUSTRATED

(a) Two plano-convex discs of lead. Weights, 11 ozs. and 13 ozs.; maximum diameter, 2·6-2·4 inches.¹ Use unknown. Not uncommon in Roman deposits at Chester.

1. Similar discs are illustrated in *Liverpool Annals*, XI, Pl. IV, 4-6.

Block E. In floor of front (E.) room.

(b) Three sheets of lead, varying in thickness from 1.5–3 mm.

Upper Roman stratum.

(c) Spindle whorl of lead.¹

Block A. Unstratified.

(d) Spindle whorl in fine micaceous sandstone. Diameter 1.3 inches.

Block A. Unstratified.

(e) Styli or writing instruments of iron. Two imperfect and very badly corroded.

Blocks A and F. Unstratified.

(f) Hone or sharpening stone. A small section of one just like those found in a hoard at Wroxeter, and likewise showing longitudinal saw cuts. The fine greyish sandstone is not local, but its exact formation has not yet been traced.

Interval Tower. In disturbed upper stratum.

(g) Unworked fragment of jet.

DECORATED WALL PLASTER

Plates IX and X

See p. 15 and Text Figs. 5 and 6. The decorated plaster had apparently been given a special burial place in the sand floor of the room, and the plain undecorated plaster had been scattered more or less evenly over the then existing floor level. Collectively the decorated pieces represent but a very small proportion of the whole, and therefore it seems reasonable to assume that the decoration was confined to a relatively small area, such as a niche or sunk panel. As evidence of this several pieces bear the impress of the ledge upon which they rested (Pl. X, 7 and 8). Furthermore, there were two renderings of decorated plaster: the one superimposed on the other (Pl. X, 6 and 8). These are described below as first and second renderings, respectively.

1. First rendering. Colour Pompeian red, punch-marked for keying to second rendering.

2. Fragment of first rendering with part of a flower, pansy-like in form in two shades of red, with a central eye-spot of yellow.

1. A similar whorl is illustrated in *Liverpool Annals*, XVIII, Pl. XLVII, 71.

3. First rendering. This seems to have formed the central portion of the panel. The design consists of two concentric circles, evidently struck with a compass as the point has left its mark in their centre. The inner circle is yellow and within it is a large flower of four red petals with a green centre. The outer circle is purple-brown, and is broken in places with patches or blobs (leaves?) of green and yellow; a purple-brown tendril also leads off from it at another point. Below the circles is part of a broad black border showing pale parallel striae somewhat resembling the structure in the leaf of an Iris, a character more clearly shown in Pl. X, 4.

4, 5. Two fragments illustrating the technique of the plain black borders. They also exhibit the punch-marks for keying to the second rendering of coloured plaster.

6. In this fragment the two renderings are attached together. The first (*a*) is plain; the second (*b*) is Pompeian red, with a relatively broad white line.

7. First rendering. This apparently belongs to the base or framework of the panel, as it is broadly chamfered, and its lower edge or face bears the impress of the flat ledge, 1·3 inches thick (≈ 0.032 m.), to which it was attached. The design consists of a number of green and yellow buds and leaves painted in a rough rapid style.

8. The two renderings attached together. The first (*a*) is plain and white-washed, broadly chamfered, and bears the impress of the flat ledge as in No. 7. The second rendering (*b*) is 0·6 inch (0·015 m.) thick where the white line crosses it, but thins out to a mere skimming where it covers the thin sharp edge of the first rendering. The ground colour is Pompeian red, with a white stripe as in No. 6, and is evidently part of the same panel.

The rest of the design on the second rendering is not at all clear. There are two fairly large fragments, both attached to the first rendering, showing a broad yellow border and a narrow blackish band, enclosing part of a very clumsy floral design, a large red-petalled flower (rose?) on a black stalk. The rest is a confused freckled mass of colour in which green, red, brown, black and white can be traced. Furthermore, these fragments show that the whole surface had been given a primary coat of dull wine-red colour; secondly, a coat of lime-wash, and over all the decoration.

PLAIN WALL PLASTER

Plate XX, Fig. 2

An interesting example of plain wall plaster was found in the upper Roman stratum, over the cement floor in room No. 1 of block A. It had evidently formed part of a wattle-and-daub party wall, presumably in the area in which it occurred. But it was an isolated piece lying embedded among the fallen masonry and rubble. It consists of two renderings. The first (Fig. 2a) bears the impressions of the wattle on one side, and the other the impress of a rather narrow-bladed trowel. The second rendering (Fig. 2b) bears on one side the casts of the impressions made by the trowel on the outer surface of the first coat, and on the other the smooth finished surface, coated with two or more layers of lime-wash.

Bushe-Fox¹ found clay used as a first rendering in the construction of wattle and plaster walls, and in a footnote states that according to Pliny this was the usual method employed by the Romans. In block A, room No. 2, clay was used on the stone walls as a foundation for the final coat of plaster; elsewhere this was attached direct to the masonry.

LEGIONARY STAMPS

Plate XXI

The official tile stamps of the Twentieth Legion here described were all found in the upper Roman stratum in the Deanery Field: the majority came from the great tile layers, one in the N. cut through the rampart, the other over the structural remains of the gateway. These great masses of tiles had evidently been laid down at the time when the buildings were demolished. The evidence for dating points to the closing years of the second or the early years of the third century, a date confirmed by other datable stamps found in the Deanery Field during the earlier exploration; and also by those from the inhumation burials in the Infirmary Field of late second-early third-century origin.

No legionary stamps have yet been discovered in the earlier stratified deposits in the Deanery Field, and none was found in the great masses of broken tiles explored in the early deposits in the rampart building at No. 1 Abbey Green. So it may be taken as a fair inference that the

1. Bushe-Fox, *Wroxeter*, 1912, p. 8.

official stamping of tiles was not generally practised until the second century.

1. **LEJG XX VV** $\widehat{\text{DE}}$ —Holt type No. 12.

The large rustic letters with fish-tail terminals are very like those in No. 2, and the stamps for both seem to have been cut by the same die-sinker.

One example from the gateway in the Deanery Field, in the same stratum as No. 7.

The use of $\widehat{\text{DE}}$ (= *Devae* or *Devensis*) is discussed by the late Professor Haverfield.¹ The most complete example of this stamp is that figured by Watkin,² now in the collection at the Grosvenor Museum. The letters are set within an ansate border.

2. **LEG XXV**—Holt type No. 11.

The letters are within a clamp-like border, and the first **V** seems to be interwoven with the **XX**, as in a monogram.

Twelve examples, all from the tile layer in the N. cut through the rampart. Although many are incomplete, none shows any trace of weathering.³

2a. A more perfect example of the letter **G** in the type No. 2.

3. **LEG XX VV**—Holt type No. 2.

Two examples from the tile layer in the N. cut through the rampart, and three from the tile layer in the gateway, all incomplete. The illustration is taken from one of five stamps on roof-tiles from graves in the Infirmary Field,⁴ dated to the late second-early third century. Objects datable to the late second-early third century were found with the stamp recorded from the Deanery Field in 1926.⁵

4. **LEG XX VV**—Holt type No. 7.

Two examples from the upper Roman stratum ('Antonine'), block A—one complete and unworn, the other imperfect and badly weathered. The lettering is very similar to that of No. 3; but the **VV** are relatively thinner, and the ansate border is distinctive.

5. **LEG XX VV**—Holt type No. 1.

One from the tile layer in the N. cut through the rampart; four from the tile layer in the gateway; two from the upper Roman stratum

1. *Eph. Ep.*, IX, 1247; *Arch. Camb.*, 1916, p. 232.

2. Watkin, *Roman Cheshire*, p. 118.

3. For earlier finds cf. Brushfield, *Chester Journal*, O.S., Vol. III, p. 18.

4. *Liverpool Annals*, VI, p. 155.

5. *Liverpool Annals*, XV, p. 31.

over block F; and one from the same stratum over block A. Three are complete though slightly blurred by the impress of dogs' foot-pads. All of them show signs of weathering, especially the two examples in softer clay.

Three stamps of this type found in the Deanery Field during our earlier excavations were all associated with material dated to the second century.

The ansate border and the ligatured **GX** are distinctive of this stamp.

6. **LEG XX AN**—Probably a variant of the Holt type No. 33.

Found under the moulded stone (Pl. IV, Fig 1) in the gateway in a deposit datable to the Antonine period. Though incomplete it evidently belongs to the *Antoniniana* class, which Miller¹ states were in greatest use by the legions from 212 to 222 A.D.

7. **LEG X**—Holt type No. 30.

Incomplete. Found in the tile layer in the N. cut through the rampart, with other legionary stamps, Nos. 2, 3 and 5. The tile is in very hard pale red clay, coated with ochreous-yellow slip.

This is clearly the same type as the stamp on the tile from Holt² bearing the *graffito* relating to the *Cohors I Sunicorum* which garrisoned Segontium in the third century. Haverfield³ states that this cohort was in Britain 124 A.D., and at Carnarvon c. 210.

Mr. W. F. Grimes has kindly determined the stamp as being identical with his No. 30 from Holt.

8. **LEG XX VV**—Not represented at Holt.

Two examples, one perfect the other incomplete, from the upper Roman stratum ('Antonine'), over block F.

The ansate border and the blundered **V** are the characteristics of this stamp.

9. **LEG XX VV**—Holt type No. 6.

Three imperfect examples from the upper Roman stratum ('Antonine') over the structural remains, block F.

The two examples on tiles from graves Nos. 26 and 35 in the Infirmary Field⁴ are datable to the late second-early third century.

1. *Archaeologia*, 78, pp. 159-60.

2. Grimes, *op. cit.*, p. 133, Fig. 60, No. 3.

3. *Roman Britain in 1913*, p. 30; *Arch. Camb.*, 1916, p. 233.

4. *Liverpool Annals*, VI, p. 155.

GRAFFITI ON TILES

Pl. XXI, Nos. 11-13

10-13. Three of the roof-tiles bearing a legionary stamp had numerals deeply cut on the lower edge when the clay was still plastic. The first two (Nos. 10, 11) are on tiles bearing the stamp, type No. 3, and seem to read VI and III respectively. No. 12 has the numerals IIX or XII; and No. 13 may be read as V or II. These marks, all occupying the same relative position, are puzzling, but it is possible, if not probable, that they may represent the tile-makers' marks.

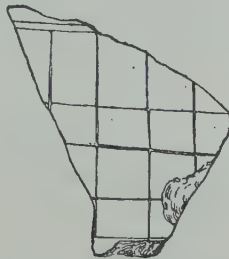


Fig. 7.—ROOF-TILE. Scale 1:4.

Fragment of a roof-tile with squares roughly scored on its upper surface before baking (Text Fig. 7). The lines are, however, very shallow and seem quite unsuitable for keying into plaster or the like. It is possible, therefore, that the tile was intended for use as a kind of 'playing-board' such as the one found at Corbridge, the probable use of which is discussed by Curle.¹

Graffiti on ridge tiles.



Figs. 8 and 9.—GRAFFITI. Scale 1:4.

The numeral XIIII was marked before baking on the outer surface of two ridge tiles (Text Figs. 8 and 9) found in the tile layer at the base

1. Curle, *op. cit.*, p. 339.

of the bank formed along the interior of the rampart building No. 1 Abbey Green. Late first century.

COINS

The list of coins found in 1935 includes all the pieces found during our deliberate excavations, and also those found by the workmen in the surface deposits during the levelling operations chiefly from the northern area over blocks B and C. The most noteworthy are the Asses of Domitian, both in fine condition, and the Denarius of Antoninus Pius (No. 7), commemorating the public burning of the Emperor's effigy.

Mr. Harold Mattingly has very kindly identified the worn specimens, and also confirmed the identification of all the other pieces.

COINS

Vespasian (69-79 A.D.)

1. *Obv.* [IMP CAES VESPASIA]N AVG P M T[R P COS III P P?].
Head laureate r.
Rev. S P Q R OB CIVES SERVATOS.
1. Æ. Worn condition. Surface find.
2. *Obv.* [IMP] CAES VESPASIAN AVG COS I[II P P?].
Head laureate r.
Rev. [VI]CTORIA NAVALIS . S C.
Victory r.
2 Æ. 77-79 A.D.
Over footings, N. end of block A.

Domitian (81-96 A.D.)

3. *Obv.* IMP CAES DOMIT AVG GERM COS XIII CENS PER P P.
Head laureate r.
Rev. VIRTVTI AVGVSTI. In field, S C.
Virtus standing r., holding spear and parazonium.
2 Æ. (As.). 87 A.D. Excellent condition. Foot of rampart with late Flavian pottery.
4. Obverse and reverse as in No. 3, but from a slightly different die, as the spacing of the letters $\overline{\text{S C}}$ indicate.
2 Æ. (As.). 87 A.D. Excellent condition. Top of footings, block F.

Nerva (96-98 A.D.)

5. *Obv.* [IMP NERVA CAES] AVG GM TR P COS III P P.
Head laureate r.
Rev. [FORTVNA] AVGVST. In field, S C.
Fortuna standing l.
2 Æ. Worn condition. Surface find.

Trajan (98-117 A.D.)

6. *Obv.*]CAES NERVA TRAIAN[.
Radiate crown r.
Rev. Woman seated l. on chair with cornucopiae.
2 Æ. Poor condition. Date c. 98-102. Surface find.

Antoninus Pius (138-161 A.D.)

7. *Obv.* DIVVS ANTONINVS.
Head r.
Rev. CONSECRATIO.
Funeral Pyre.
Denarius in excellent condition. Surface find.
Mattingly and Sydenham, III, p. 247, No. 436=Cohen 164.
8. *Obv.* Head laureated r.
Rev. Obliterated.
2 Æ. (As.). Surface find.

Commodus (177-192 A.D.)

9. Fragment of a denarius.
Upper Roman stratum, block D.

Tetricus I (260-290 A.D.)

10. *Obv.* IMP C TE[TRICVS P F AVG].
Bust radiate and draped r.
Rev. [PAX AVG].
Pax standing l. holding branch and sceptre.
3 Æ. Upper Roman stratum, block A.

11. *Obv.* Radiate crown r.
Rev. Pax standing l.
 3 Æ. Inscriptions obliterated.

Victorinus (265-267 A.D.)

12. *Obv.*]ORINVS[.
 Bust radiate r.
Rev. [PIE]TAS.
 Pietas sacrificing l. over altar.
 3 Æ. Surface find, block E.

Gallienus (253-268 A.D.)

13. *Obv.* [GAL]IENVS AVG.
 Radiate crown r.
Rev. ABVN[DANTIA AV]G.
 Abundantia standing r. Mint mark, B | .
 3 Æ. Upper Roman stratum.

Constans (Augustus, 337-350 A.D.)

14. *Obv.* [CONSTA]NS P F AVG.
 Bust l.
Rev. FEL TEMP REPARATIO.
 Soldier dragging barbarian ? from hut.
 Mint mark SLG Lyons.
 3 Æ. Date c. 348 A.D. Upper Roman stratum, block A.

Constantine I and Contemporaries

Urbs Roma

15. *Obv.* VRBS ROMA.
 Helmeted bust of Roma, l.
Rev. Victory holding shield in l. hand ; r. foot on prow of vessel.
 Mint mark TRS, Trier.
 3 Æ. (Minimus.) Rampart, over stratum of tiles.

16. *Obv.* VRBS ROMA. Bust of Roma, l.

Rev. She-wolf, l., suckling Romulus and Remus. Above, two stars.

Mint mark TRP, Trier.

3 Æ. c. 330-337 A.D. Upper Roman stratum, block A.

POST ROMAN

Reckoning counters or Jettons—15th Century (five).

Deanery Field. Top soil.

Charles II (1660-1685 A.D.)

Obv. CAROLUS · II · DEI · GRATIA.

Bust laureate r.

Rev. MAG · BR · FRA · ET HIB · REX ·

Crown and harp. 1680. Irish halfpenny in good condition.

Deanery Field. Top soil.

Also three similar pieces, all in poor condition.

William III (1689-1702 A.D.)

Sixpence in poor condition.

Deanery Field. Top soil.

George III (1760-1820 A.D.)

Broad-rim pennies (3) and halfpennies (5).

Deanery Field. Top soil.

FOURTEENTH-CENTURY POTTERS' KILN

Pls. XXII and XXIII

The sadly mutilated remains of the furnace of a potters' kiln, which from its structure may be attributed to the fourteenth century, was found built on the line of the E. wall of the Roman barrack, block A (see plan, Pl. XXIV). One chamber only was left, and the E. side of this was badly damaged. Fortunately the details on the W. side (Pl. XXII below, Fig. 4) showed quite clearly that the furnace was in construction similar to that found in the Deanery Field in 1928.¹ The

1. *Liverpool Annals*, XVIII, p. 17.

groined (S.) portion of the chamber consisted of four arches built of voussoir-shaped tiles with splayed angles (see below, 4, 4a) springing from a base of well-dressed sandstone; each arch separated by *vertical*, square-faced ribs of sandstone set flush with the basal course of masonry. The northern portion of the structure forming the entrance to the furnace was narrower than that of the groined portion, and composed of well-dressed blocks of sandstone; and the S. end was blocked with similar masonry. The whole was set in puddled clay burnt to the hardness of brick. The floor was capped with hard cement or mortar; its foundation, however, was not explored. The approach to the stoke-hole at the N. end was capped with fragments of pitchers and a few over-baked floor tiles, used evidently as metalling in substitution for the Roman foundations which had obviously been removed to make way for the mediaeval structure.

TILES

Pl. XXIII, Figs. 4, 5 and 6

4, 4a. Voussoir-shaped tiles in brick-red clay. Apparently fired before they were used in the construction of the arches. They tapered slightly in width and markedly so in thickness: length, 7 inches; width, at square end 5·8, at the commencement of splay, 5·5 inches; thickness at square end, 2·0–1·8 inches, and at splayed end, 1·3 inches.

5, 6. These tiles are undecorated and unusually small. Two shapes were found: (a) square with 1·8 inch sides; and (b) triangular, made by bisecting the former at an angle of 45°.

They were made in compound blocks, measuring over all 5·1–5 inches square, and cut, before baking, into smaller squares and triangles through two-thirds of the thickness of the clay. In one (Fig. 6), the complete block was divided into six squares and six triangles; in the other (Fig. 5), the central square was cut out and the rest divided into six squares and four triangles.

The clay, when not over-baked, pale brick-red, and the glaze, where perfect, of a dark olivaceous green. In the over-baked and partly vitrified examples the clay is purplish-brown with darker edges, and the glaze brown-black.

Some of these tiles have fragments of slate firmly adhering to them at the sides—they had evidently been used as wedges or ‘stilts’ to pre-

vent the tiles from touching during the process of firing, but the glaze had run down the sides and fused the materials together.

POTTERY

Pls. XXII, Figs. 1, 2 and 3; XXIII, Figs. 7 and 8

7. Pitcher of squat or bulbous form. Base missing. Spout well-formed, applied. Handle four-ribbed; the three hollows between the ribs slashed. Decoration in two widely separated horizontal bands, each of five grooves. Glaze rather poor, yellow-brown shading to dull yellow, and mottled with olivaceous-brown. Clay hard, pale, pinkish buff; internal surface varying from cream-buff to yellow-buff.

8. Upper and lower portions of a tall pitcher. Handle and spout missing. Glaze yellow and unevenly distributed. Clay, like 7.

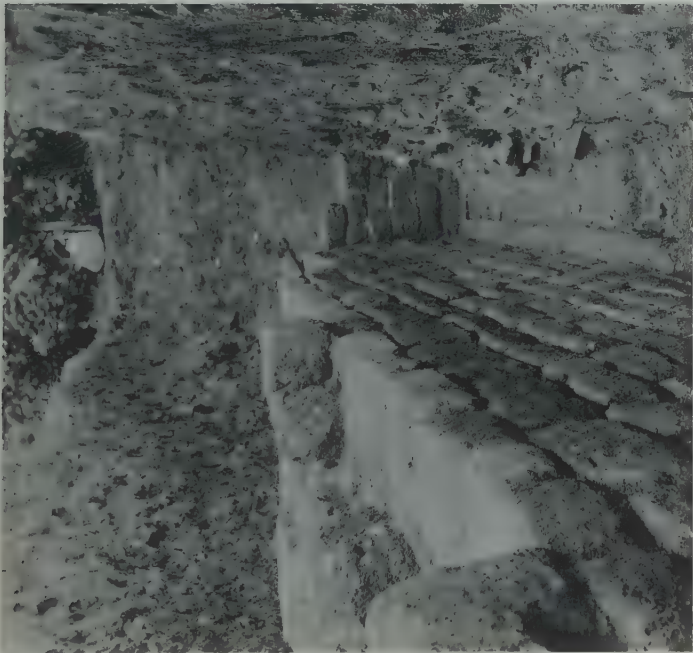
In both, many of the fractured edges and inner surfaces of the sherds are coated with glaze, evidence that the vessels had fractured in the process of manufacture and had been thrown out as wasters.

Handles (Pl. XXII, above). There are eleven of these all four-ribbed, but the indication of the median pair is sometimes faint. Five are slashed in three lines between the ribs (2); one is stabbed in a similar way (1); one rather small example is plain; and four have the bilateral hollows slashed and the central one filled with a strip of applied clay, 'thumbed down,' pie-crust fashion (3). The clay in eight examples resembles that of the vessels Nos. 7 and 8 (above); in the other examples it is over-baked and greyish in colour.

1. Upper portion of large two-handled pitcher, spout missing. Rim plain and slightly incurved; below it a horizontal strip of applied clay, 'thumbed down,' and leading from it midway between the handles is a fragment of a vertical strip of clay similarly decorated. Of the handles one only is preserved; the other, however, shows its point of attachment, indicating quite clearly that the handles were not fixed on opposite sides of the vessel, but on the proximal half of it and 3·3 inches apart only. Diameter of mouth, *c.* 4·7 inches.

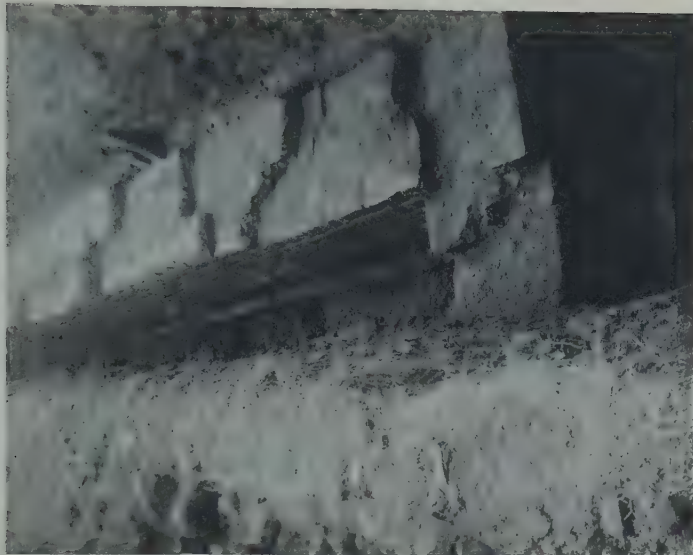
Bases (not illustrated). There are eleven relatively small sherds belonging to pitchers or jugs. All have plain edges, and three have sagged bases. Glaze yellow, unevenly applied, and present also on fractures and interiors.

Other material found in and near the kiln were some odd fragments of lead and copper and quantities of charcoal and vesicular slag. This last was generally of greyish limy-nature externally, but clean fractures revealed a dull green or bottle-green glaze, probably the residue from the manufacture of that which was used for coating the tiles.



1

RAMPART BUILDING: NE. ANGLE OF ROOM 3.
1. INTERIOR FROM W. 2. EXTERIOR FROM E.



2



1



2



3

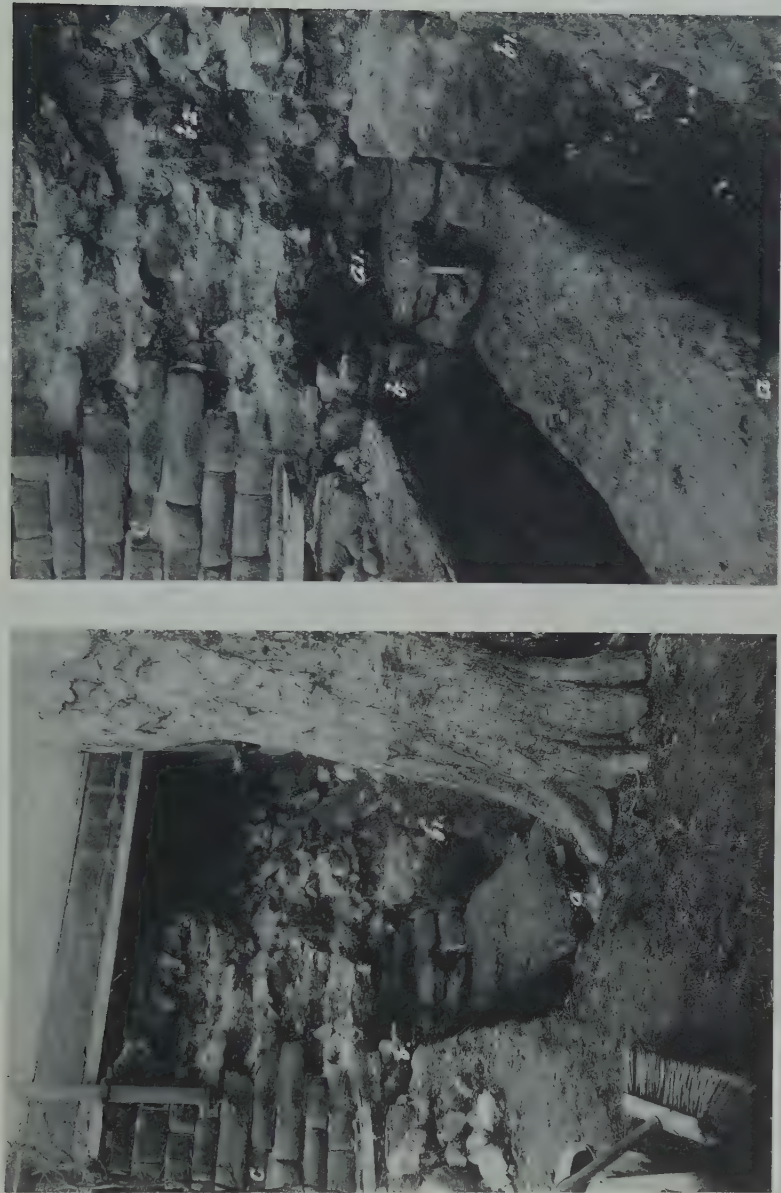


4

RAMPART BUILDING.

1. ROOM 3 WITH BANK CAPPED WITH SLABS. CLAY REMOVED. FROM S.
2. THE SAME FROM W. CLAY CAPPING UNDER BROOM. BROKEN TILE LAYER AT BASE.
3. PARTY WALL BETWEEN ROOMS 2 AND 3 STEPPED DOWN TO LINE OF TOP OF BANK.
4. E-W. CROSS WALL AT FOOT OF BANK.

Fp. 7, 8.



1
2

DEANERY FIELD.

E. WALL OF INTERVAL TOWER. 1. FROM SW. 2. FROM SE.
a, a1, ROMAN WORK PASSING INTO CORE OF MEDIAEVAL CITY WALL, b, b1, b2.
c, MODERN ASHLAR VENEER.

P. 10.



1



2



3



4

DEANERY FIELD.

GATEWAY.

1. MOULDED STONE.

2. FORTRESS WALL, INNER W. FACE.

3. PIER STONES AND ROAD PAVING FROM S. 4. THE SAME FROM N.

P. 12.



1



2



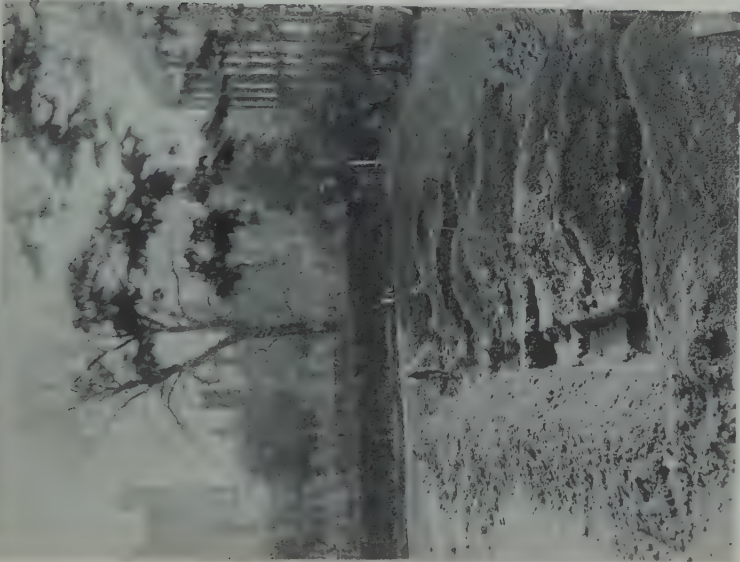
3



4

DEANERY FIELD.

1. CUT THROUGH BLOCKS E AND F. CEMENT FLOOR IN FOREGROUND. DRAIN BY ARROW. P. 18.
2. THE SAME FROM E. ROAD KERB IN FOREGROUND. DRAIN BY ARROW. P. 11.
3 AND 4. CUT INTO RAMPART SHOWING FALLEN MASONRY AND TILES.



1



2

DEANERY FIELD.

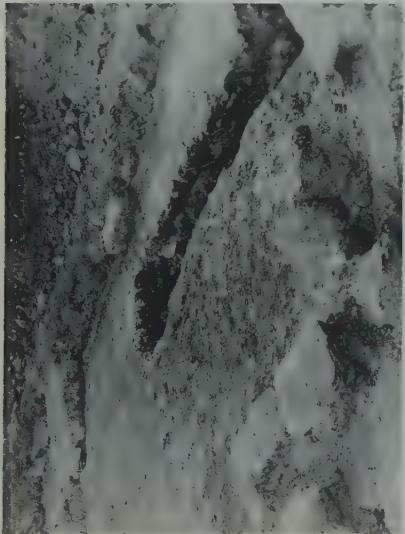
- 1. BLOCK A. CENTURIONS' QUARTERS FROM N.
- 2. BLOCK A. N. END FROM W. *a*, FOOTINGS; *b*, ROCK; *c*, DRAIN.



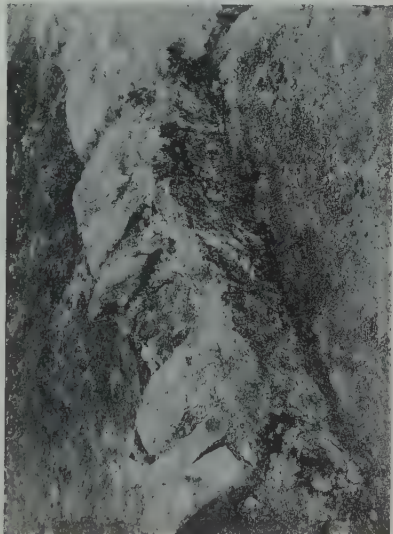
3



4



1



2

DEANERY FIELD.

- 1. BLOCK A. CEMENT FLOOR, ROOM 1, FROM SE.
- 2. BLOCK A. ROOM 1, W. PARTY WALL WITH PLASTER *in situ*.
- 3. BLOCK D. ARROW SHOWS BALLISTA BALL *in situ* IN UPPER ROMAN STRATUM.
- 4. BLOCK F. SECTION OF CEMENT FLOOR FROM S.

P. 14.
P. 14.
P. 37.
P. 18.



1



2



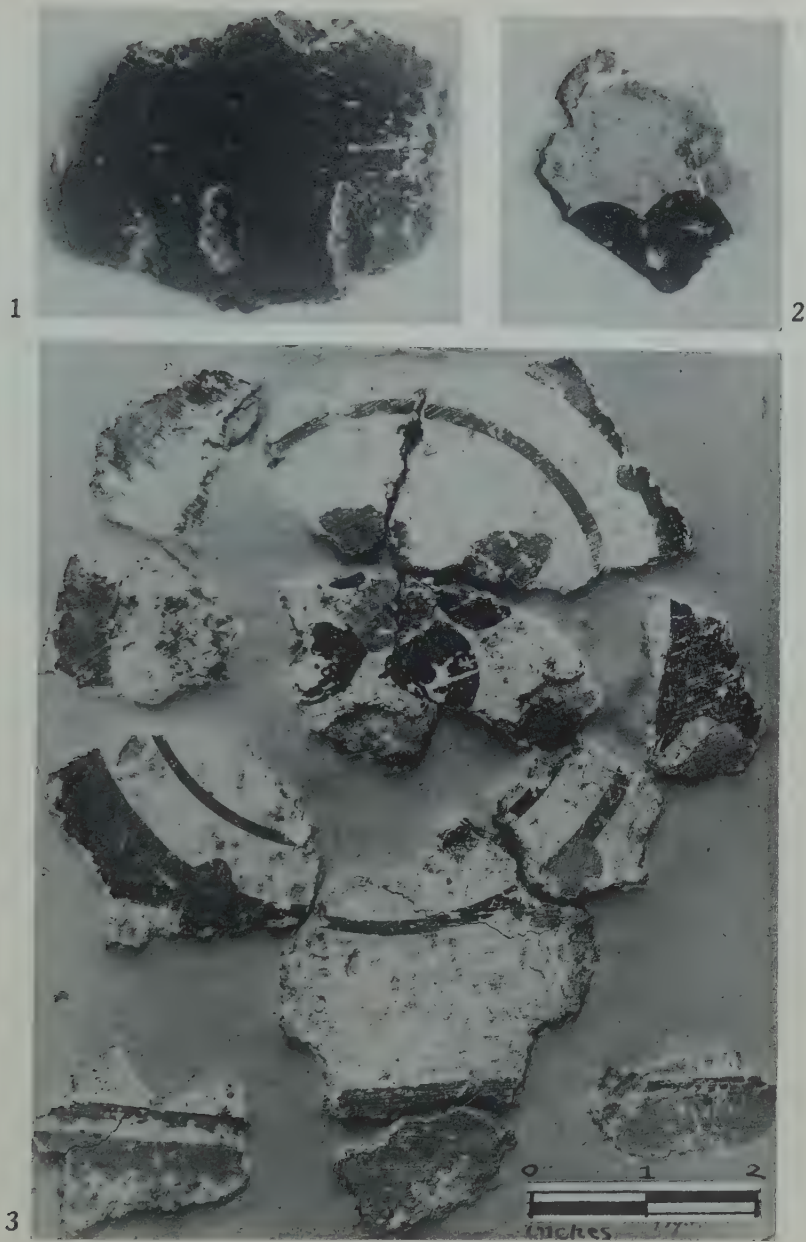
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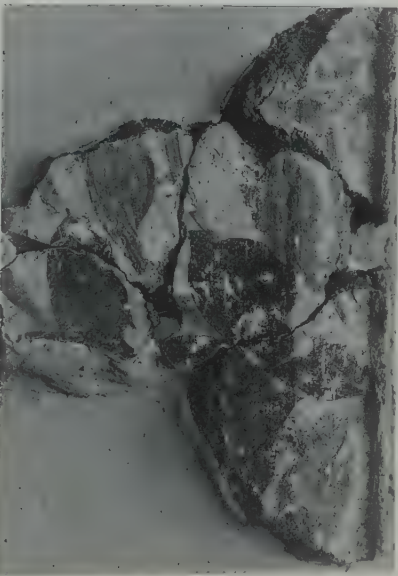
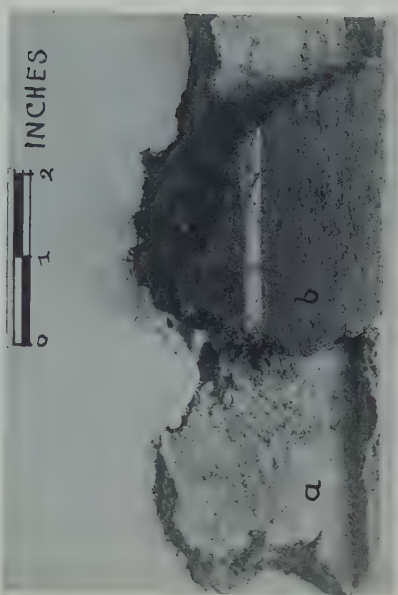
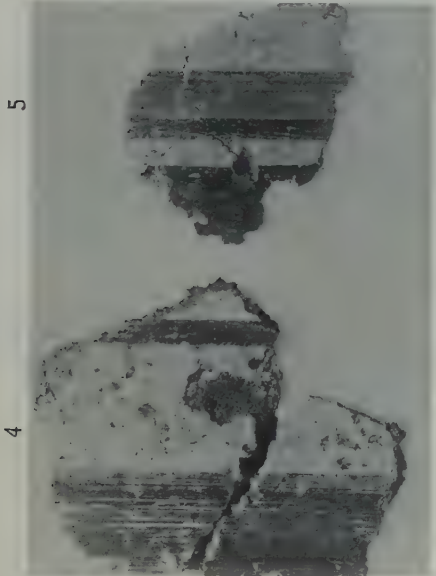
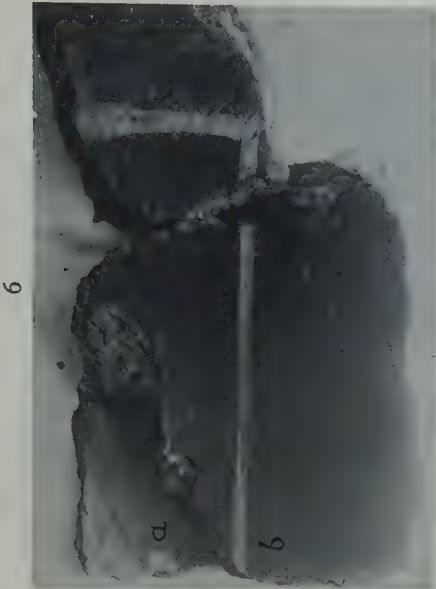
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DEANERY FIELD.

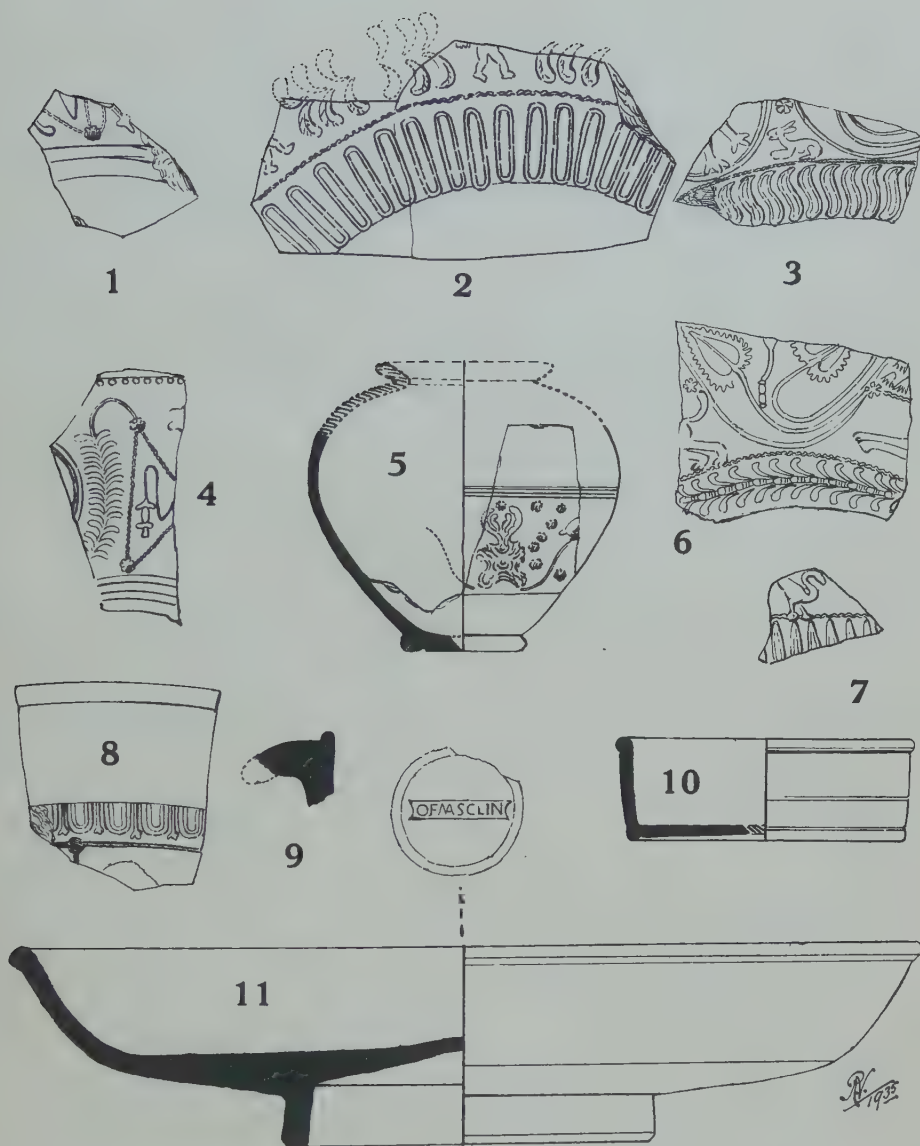
1. BLOCK D FROM E. FOREGROUND ROAD METALLING. BACKGROUND FOOTINGS. P. 18.
2. BLOCK F, S. END. FOOTINGS AND DRAIN (MARKED BY ARROW). FROM N. P. 19.
3. BLOCK A. SINK IN NW. CORNER OF ROOM 3 AND PARTY WALL. FROM E. P. 17.
4. LEFT: CORNER STONE OF DRAIN. RIGHT: PIECE OF MOULDING.



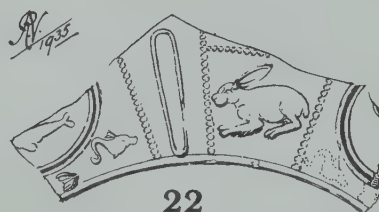
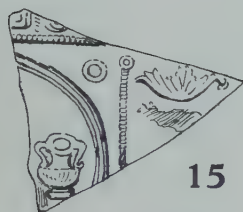
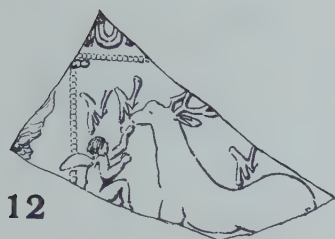
DEANERY FIELD.
PAINTED WALL PLASTER, BLOCK A, ROOM 2. P. 38.



DEANERY FIELD.
PAINTED WALL PLASTER, BLOCK A, ROOM 2. *a*, FIRST RENDERING; *b*, SECOND RENDERING. P. 38.



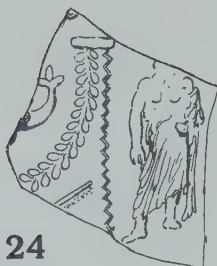
DECORATED SAMIAN WARE. SCALE 1 : 2



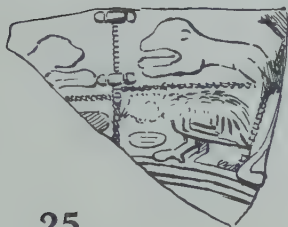
DECORATED SAMIAN WARE. UPPER ROMAN STRATUM. SCALE 1 : 2



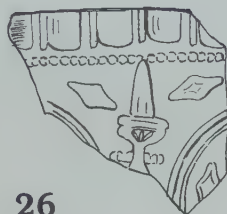
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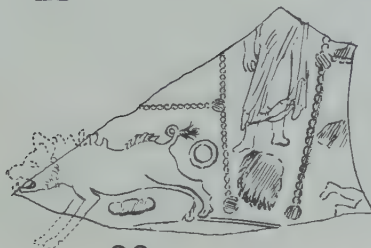
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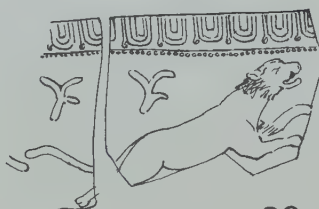
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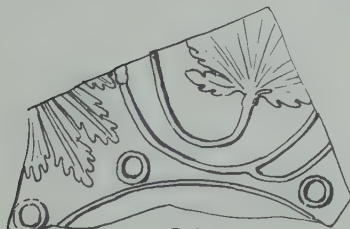
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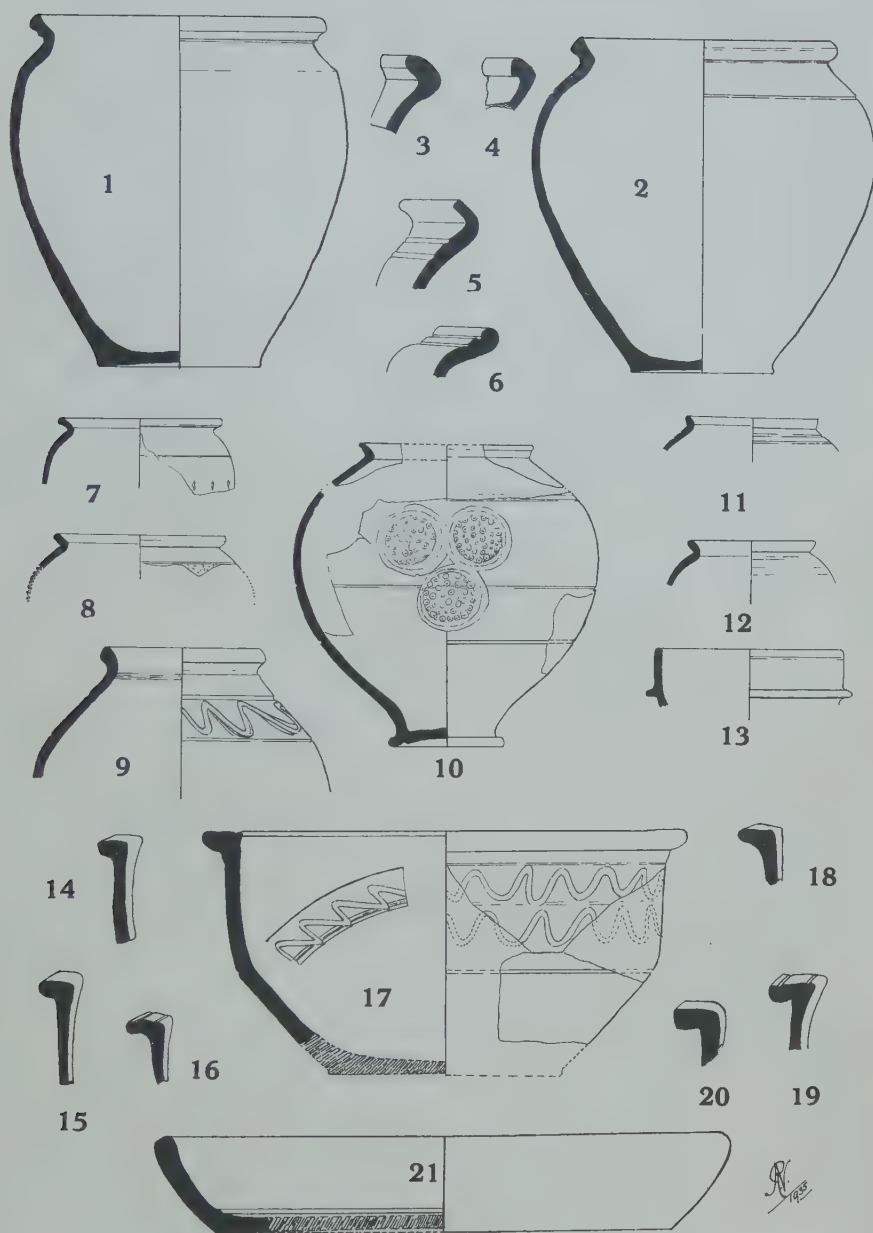


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R.
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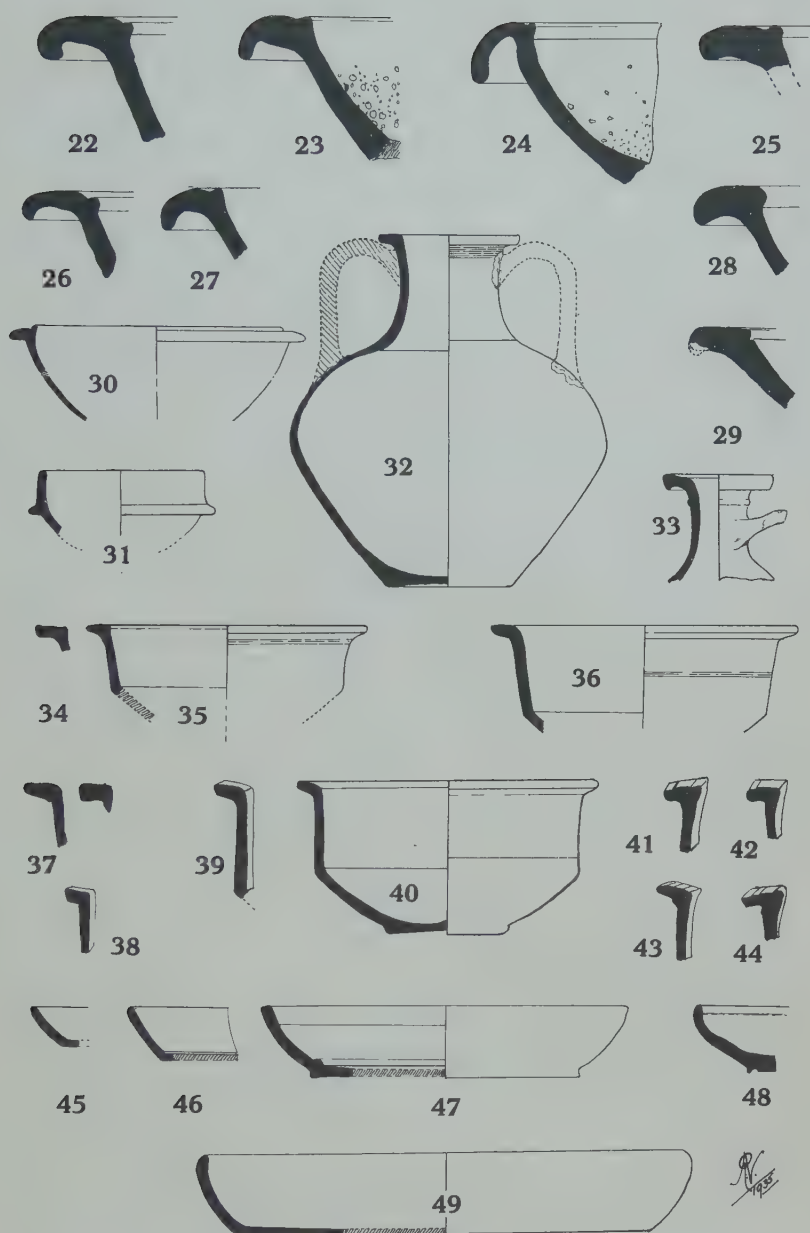


34



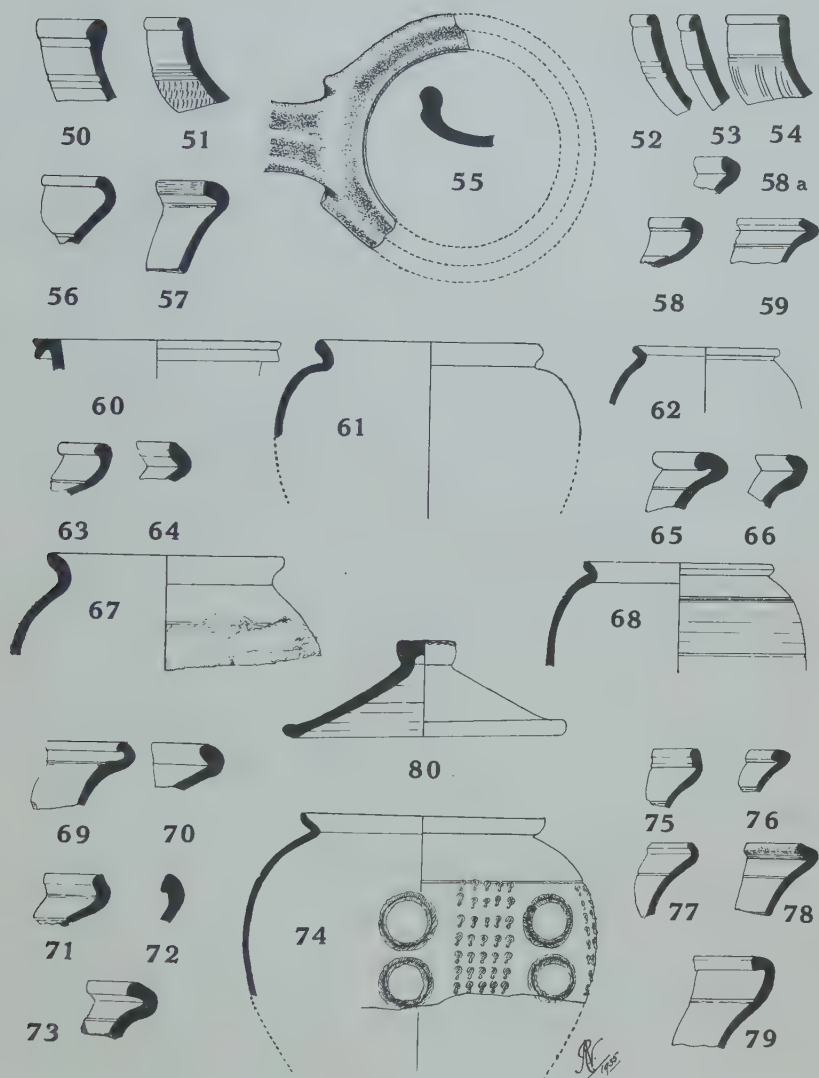
RAMPART BUILDING.

EARLY COARSE POTTERY FROM WELL-STRATIFIED DEPOSITS. SCALE 1 : 4



BARRACK BUILDINGS.

EARLY COARSE POTTERY FROM WELL-STRATIFIED DEPOSITS. SCALE 1 : 4

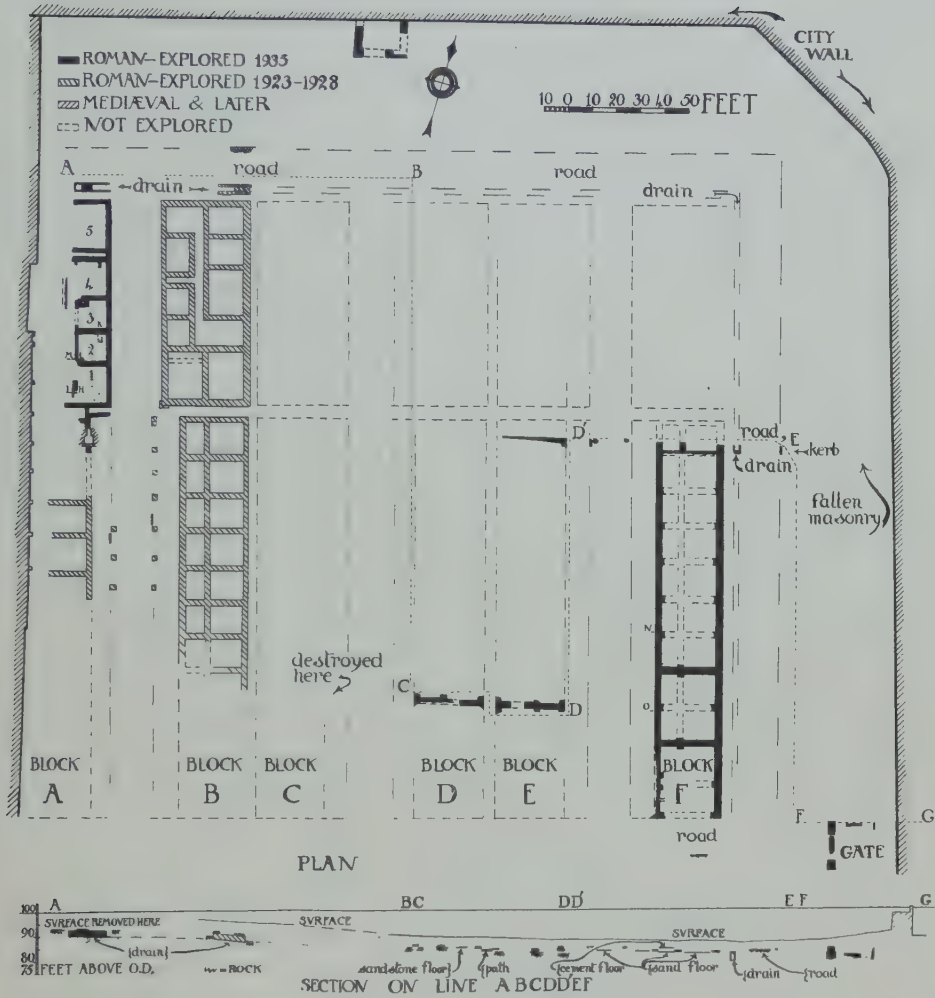


BARRACK BUILDINGS.

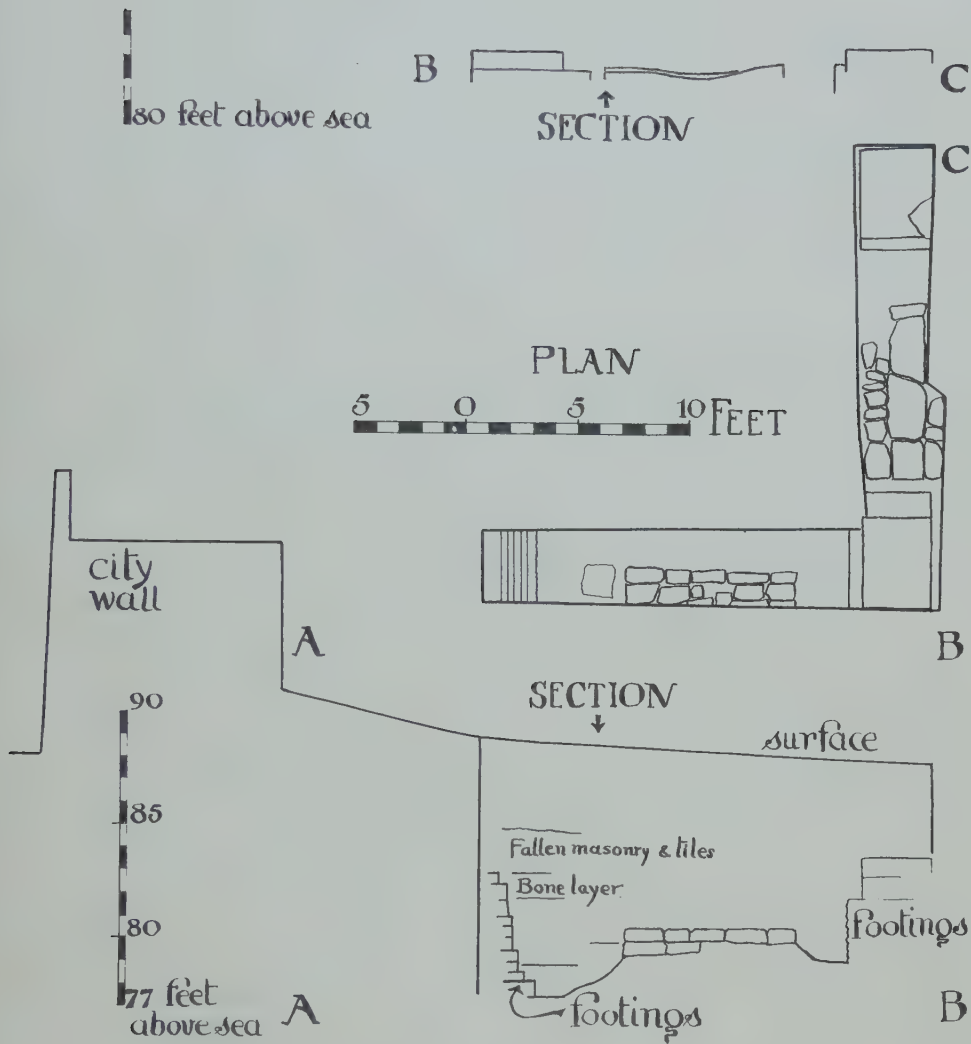
EARLY COARSE POTTERY FROM WELL-STRATIFIED DEPOSITS. SCALE 1 : 4



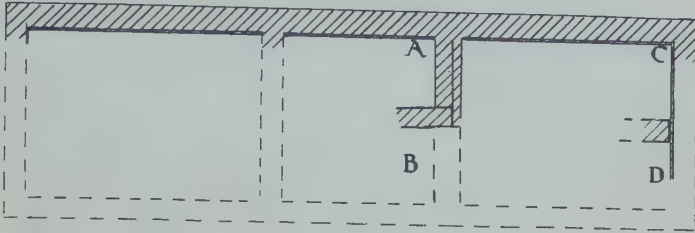
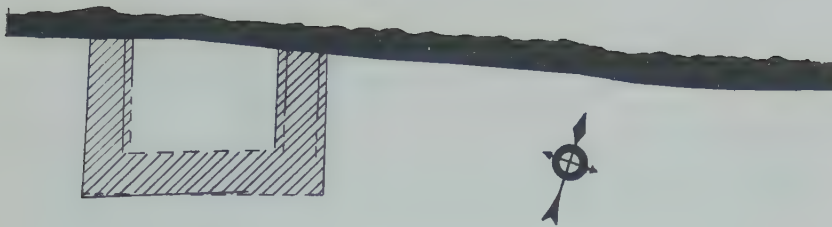
GEMS SHOWING THE 'DRILL STYLE.'



ROMAN REMAINS IN DEANERY FIELD.

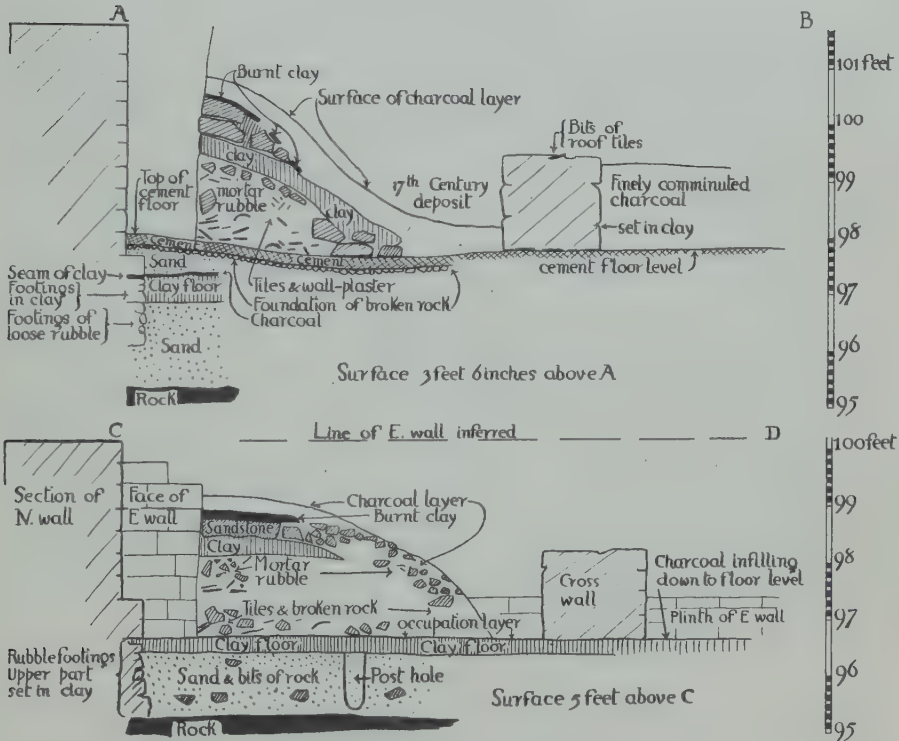


DEANERY FIELD. GATEWAY. PLAN AND SECTIONS.

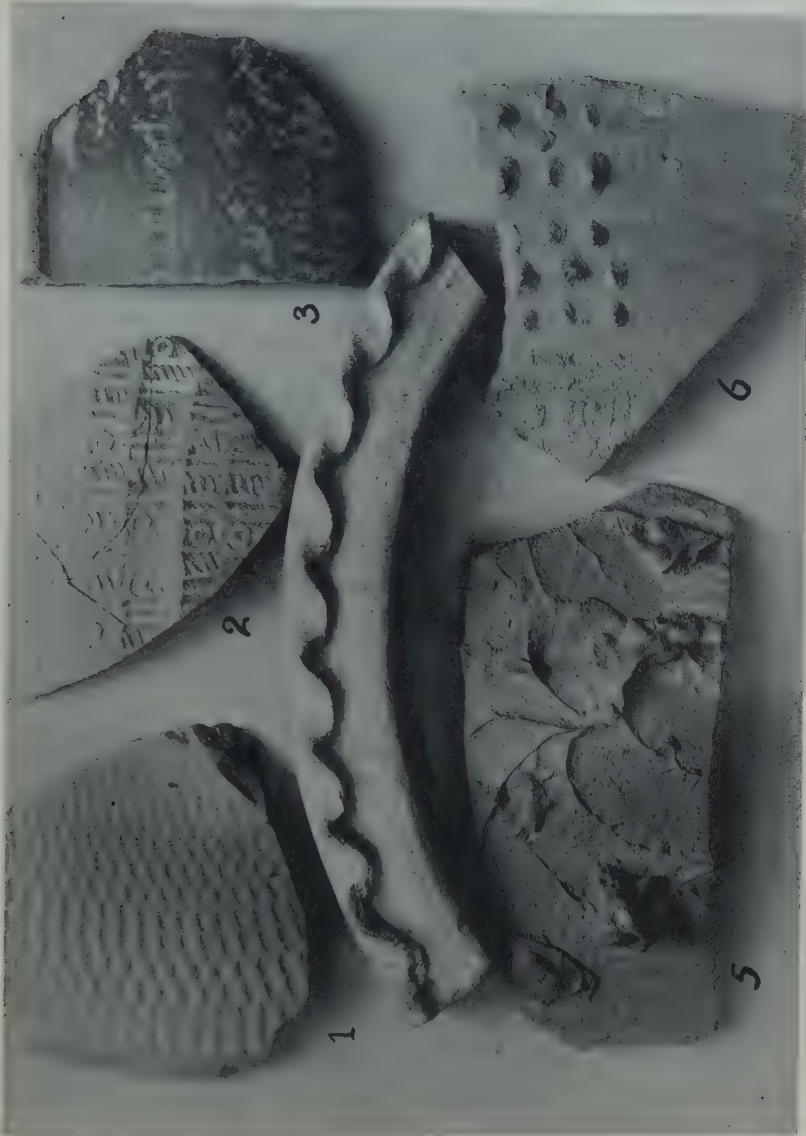


0 5 10 20 30 40 FEET

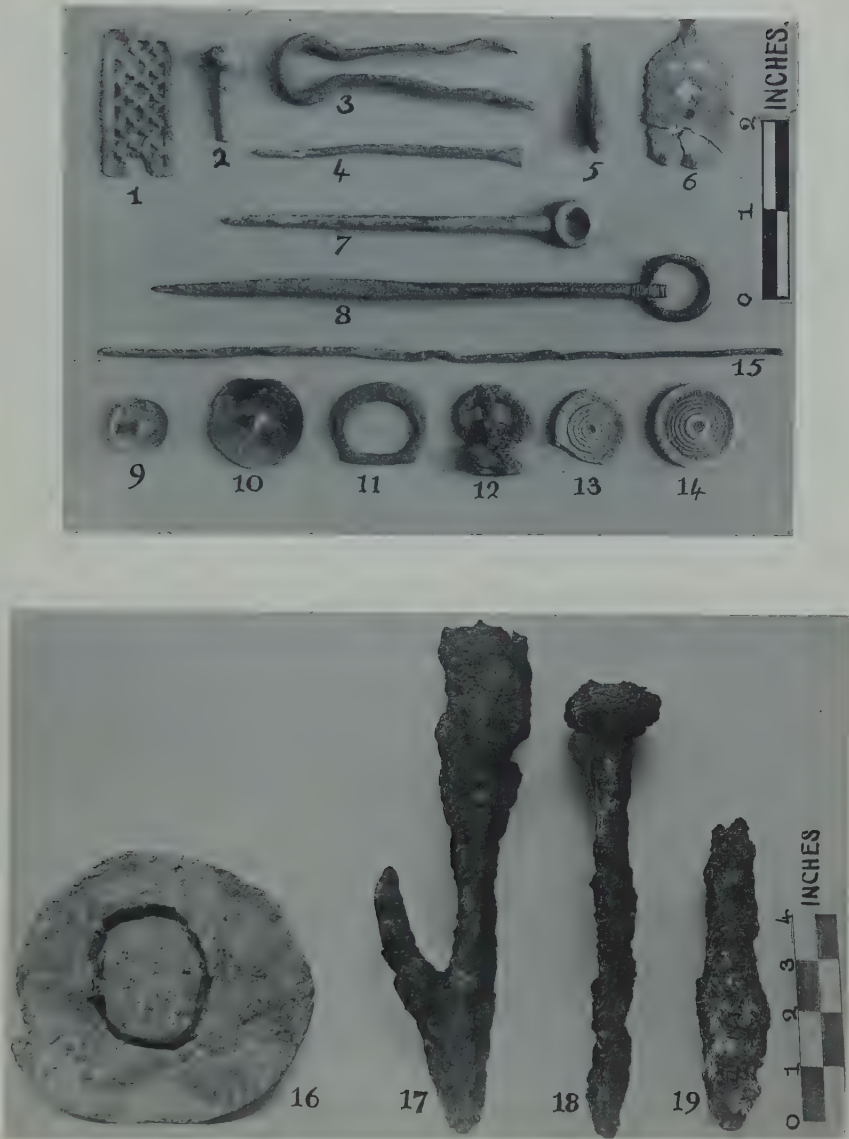
— CITY WALL-MEDIEVAL OVER ROMAN
 // ROMAN



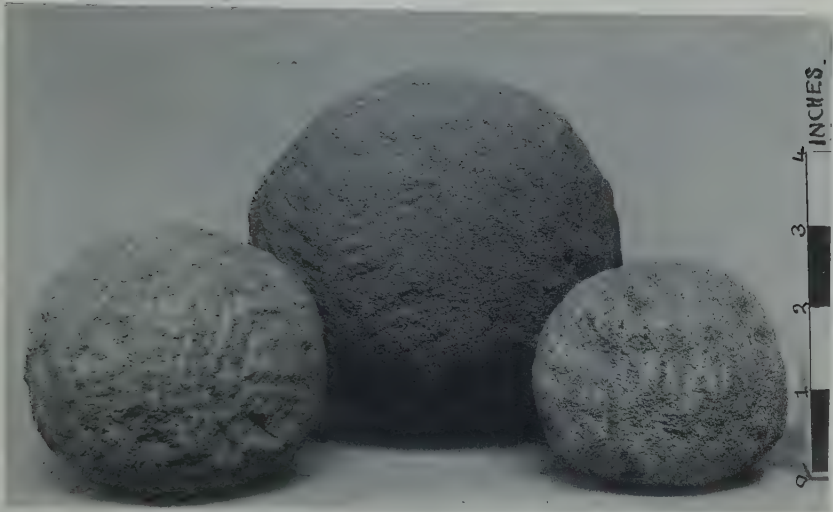
RAMPART BUILDING. PLAN AND SECTIONS.



DEANERY FIELD.
DECORATED COARSE POTTERY.



ORNAMENTS, IMPLEMENTS AND OBJECTS OF IRON.



1



2

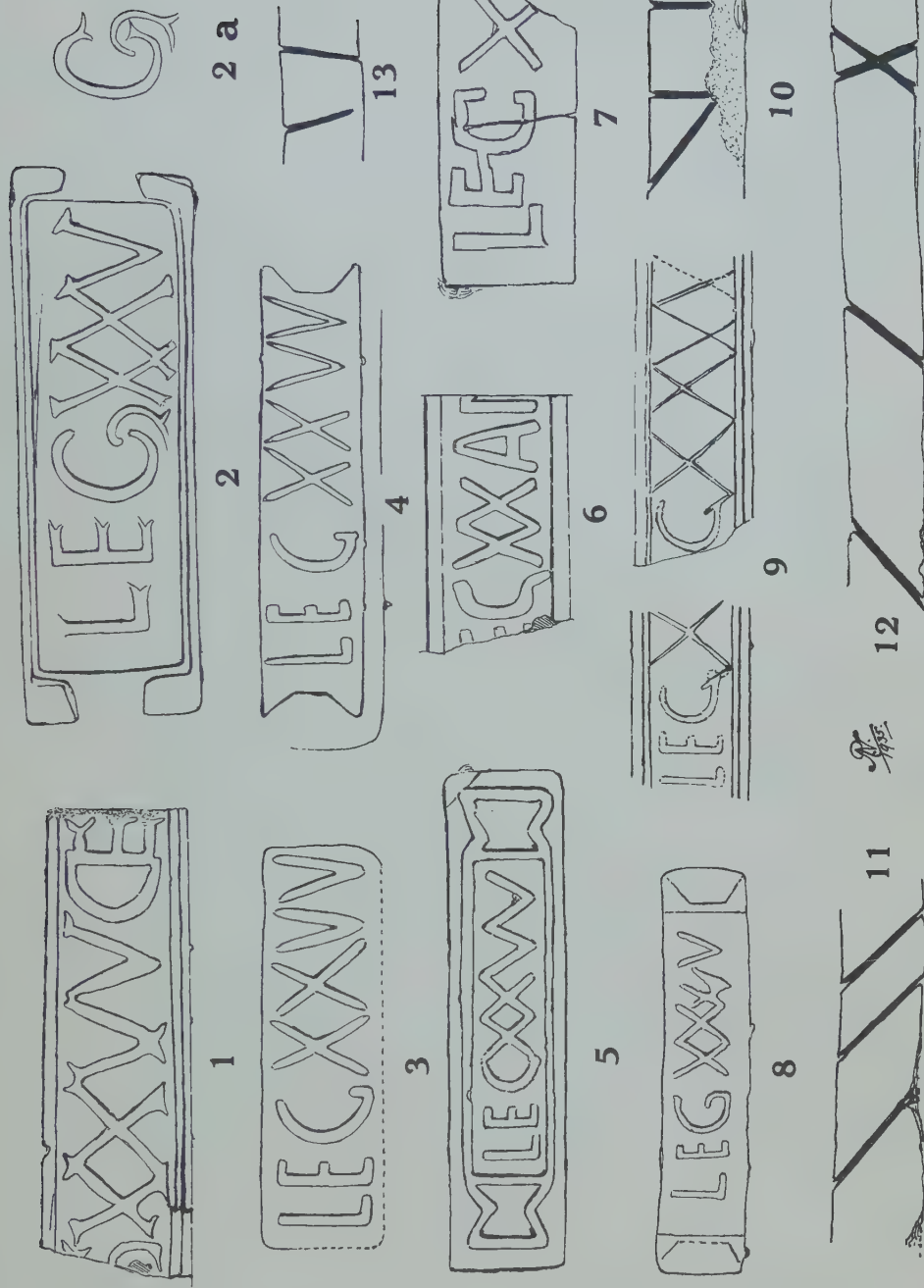
DEANERY FIELD.

1. BALLISTA BALLS.

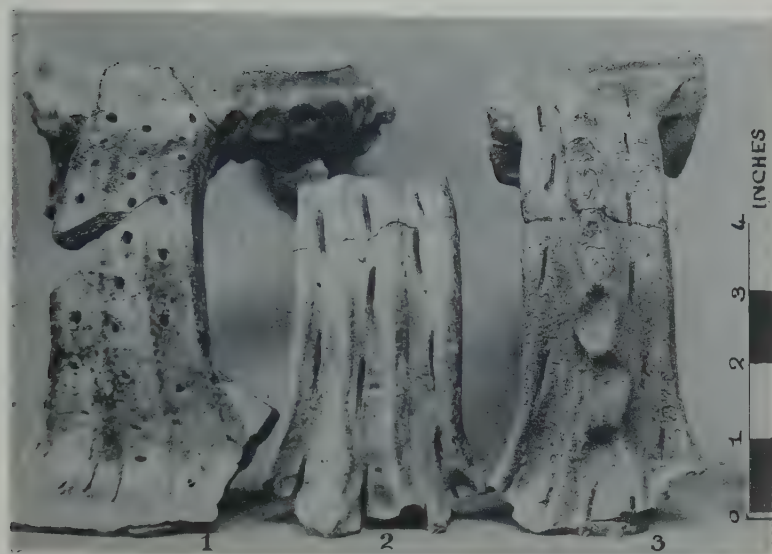
2. WALL PLASTER, WITH IMPRESS OF WATTLE (a) AND TROWEL (b).

P. 37.

P. 40.

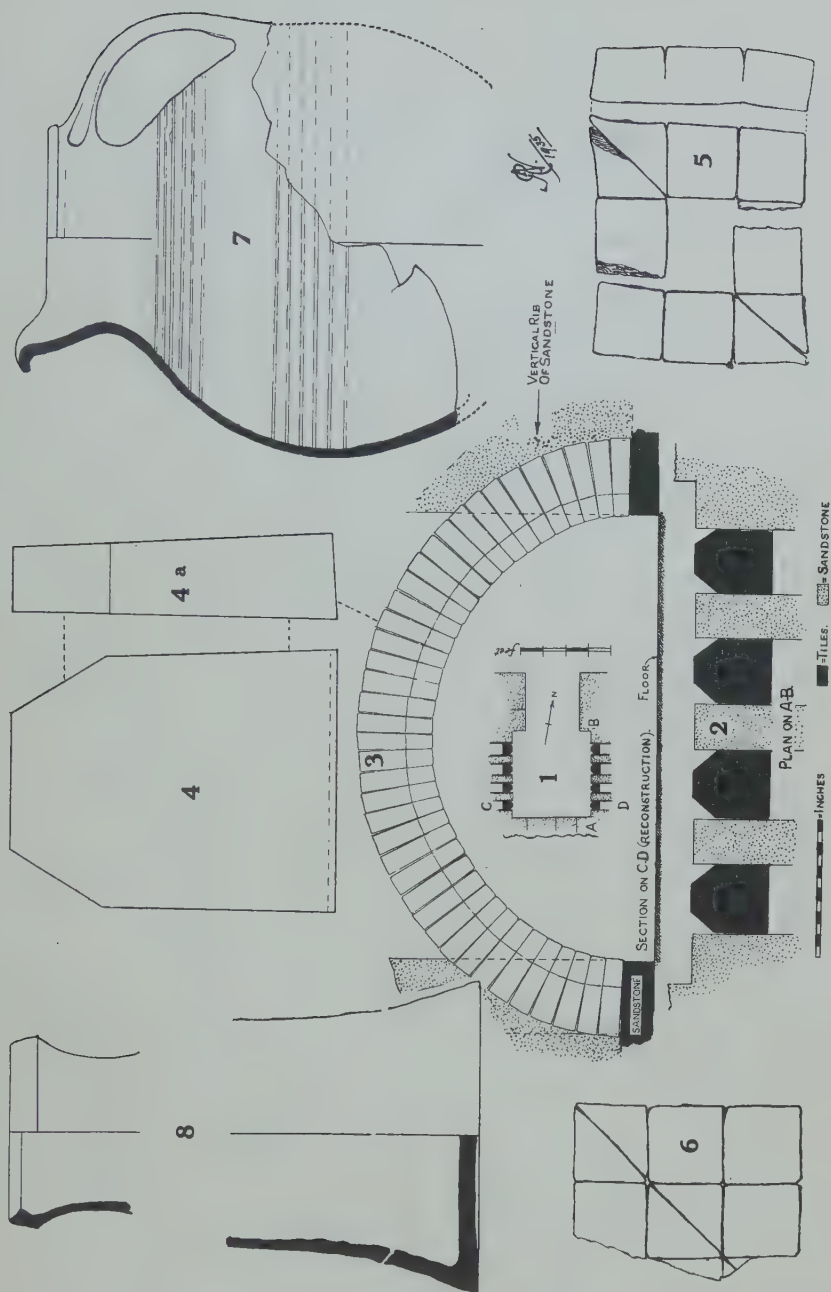


OFFICIAL STAMPS OF TWENTIETH LEGION. SCALE 1:1



DEANERY FIELD.

ABOVE—HANDLES TO 14TH CENTURY PITCHERS.
BELOW—14TH CENTURY KILN FROM NE.



DETAILS OF 14TH CENTURY KILN.

THE DRILL STYLE ON ANCIENT GEMS

BY C. R. WASON

WITH PLATE XXVII

ALL archaeologists who have wandered round the bazaars of the Near East are familiar with the gems of the Assyrian and Neo-Babylonian periods. The commonest shapes are octagonal pendants (usually called cones), cylinders and scaraboids. Hard stones, most commonly agate, chalcedony and rock crystal, are always used, and the surfaces of the stone are regular and very highly polished. The appearance of astronomical and geometric symbols which are familiar from the earliest period of Mesopotamian glyptic, and the regular representation of Babylonian cult scenes, make certain the ascription of the cones and scaraboids at least to a factory in Lower Mesopotamia; the cylinders show rather different drawing, though the method of cutting is the same, and were presumably made for the Assyrian market. In this article it is convenient to group both classes together as Neo-Babylonian. The dates of the style are fairly well defined. It is agreed that it was fully developed by the ninth century; but if M. Delaporte is correct in assigning to the Kassite period a cylinder ¹ which already shows the distinctive style, its beginnings must be pushed well back into the second millennium. At the other end of the scale a tablet ² was sealed with Neo-Babylonian signets in the seventh year of the reign of Cambyses, whereas tablets of the reign of Darius are regularly sealed with gems of Graeco-Persian style. It is thus reasonable to suppose that the conquests of Cyrus and Cambyses represent the dividing line between Neo-Babylonian and Graeco-Persian engraving.

The style of Neo-Babylonian signets shows the reduction of gem engraving to its simplest terms; the designs are roughed out with bold strokes of the drill and wheel and then highly polished, with no attempt

1. Louvre. D. 57. I am much indebted to M. Delaporte for information on the subject of Neo-Babylonian gems.

2. Louvre. A. 794.

to disguise the tool marks (Pl. XXVI, Figs. 1 and 2). On the cylinders the work is usually more refined, but even on these the tool marks can be clearly seen (Fig. 3). The sketchiness of the drawing has a practical object, for it allows a high polish to be obtained for the internal details of the design. The deliberate renouncing of naturalism and detail in order to enhance the beauty and usefulness of the seal implies a highly developed lapidary tradition, and contrasts vividly with the aims of every other school of ancient engravers.

The origin of the style is interesting. Some of the latest Mycenaean work shows the same schematic tendency (Fig. 7). Ancient craftsmen were quite ready to move when local disturbances made it inadvisable to remain settled, or when more favourable markets offered themselves elsewhere; it was often easier to export the artist than his wares. No one could move more easily than the engraver, who could carry on his back his entire stock of tools and a good supply of raw material, and it is not improbable that Late Minoan engravers after the sack of Knossos or in the unsettled conditions of the Dorian Invasion moved to the more peaceful East and influenced the course of Mesopotamian glyptic. The influence of Minoan on Assyrian art was first pointed out by Hogarth; as an example of such influence in engraving it may be noticed that about 1350 B.C. Kuri-Galzu, son of Burna-Buriash, employed a typical Minoan lentoid for a dedication to Enlil.¹

The next stage in the history of the drill style is shown by Figs. 4 and 5. The first is a cylinder, but it is of smaller size than the usual Neo-Babylonian cylinders, and its dimensions suggest North Syria rather than Mesopotamia as the place where it was made. The design points in the same direction, for it includes a leaping goat, the attitude of which is copied from the goats on early Greek gems such as the Melian gem shown in Fig. 6. Anyone who looks at the two stones can hardly doubt that the brilliant observation of the Greek invented the type; moreover, the leaping goat *motif* is traditional in the Aegean and does not appear in Mesopotamian glyptic. Even more remarkable is Fig. 5, which shows two warriors fighting for something which looks like a crab, but was perhaps intended to represent a suit of armour. The shape of this gem, a round scaraboid, as well as the Carian feathered head-dress worn by the warriors, point to south-west Anatolia as the place where it was

1. Louvre. A. 818.

made ; but the technique is derived from the drill style of Mesopotamia. The chalcedony scaraboid in the British Museum, No. 491, is a brilliant adaptation of the same technique to portray a galley. Several other gems are related by their technique. A round scaraboid in the British Museum, No. 233, shows two goats drawn with a drill technique ; the heads are very similar to that of the goat on the cylinder, Fig. 4, and again the Phoenician exergue suggests North Syria as the place of origin. A white jasper scarab in the Ashmolean shows a drill technique, but the subject, a suckling goat, is Aegean ; the gem comes from Sidon. The close relation between the Syrian coast and Mesopotamia at this time is shown by the frequent occurrence of Neo-Babylonian gems in North Syria and Cyprus, and by West Semitic names such as Menahem¹ engraved on Neo-Babylonian cones. It would be reasonable to connect the westward expansion of Mesopotamian engravers with the conquests of Cyrus, and to place it about 535 ; this would fit with the date of the Melian gem, Fig. 6, which is probably of the third quarter of the sixth century. Further, it is about the same time that the technique of Greek engraving is revolutionised by the introduction of Mesopotamian methods ; the first Greek gems which show the use of hard stones and a high internal polish are of the severe red-figure period.²

Further, there is a whole class of Etruscan scarabs which show the same technique.³ It has been recognised that these represent a degeneration style, and they are therefore put near the end of the Etruscan series and assigned to the third century B.C. For a few of them this date is correct, for the drill technique makes an ideal seal and may well have held its own for a long time against Greek influence ; but for the majority an early date is far more probable. They are found in early rings sufficiently often to make the explanation of resetting unlikely ; one would rather expect an old seal to be placed in up-to-date setting. In particular, the necklace, British Museum No. 2273, has a thoroughly early look, yet it must surely have been made to fit the twenty scarabs which it contains.⁴ The subjects on many of the drill scarabs are of an early

1. Louvre. A. 737.

2. The earliest Greek gem which is cut in hard stone is probably New York 18, the shape of which is a Neo-Babylonian cone. The interior of the design is apparently not highly polished ; interior polishing appears suddenly about the last quarter of the sixth century.

3. Fürtwangler's 'rundperl' class ; *A.G.*, Pl. XIX.

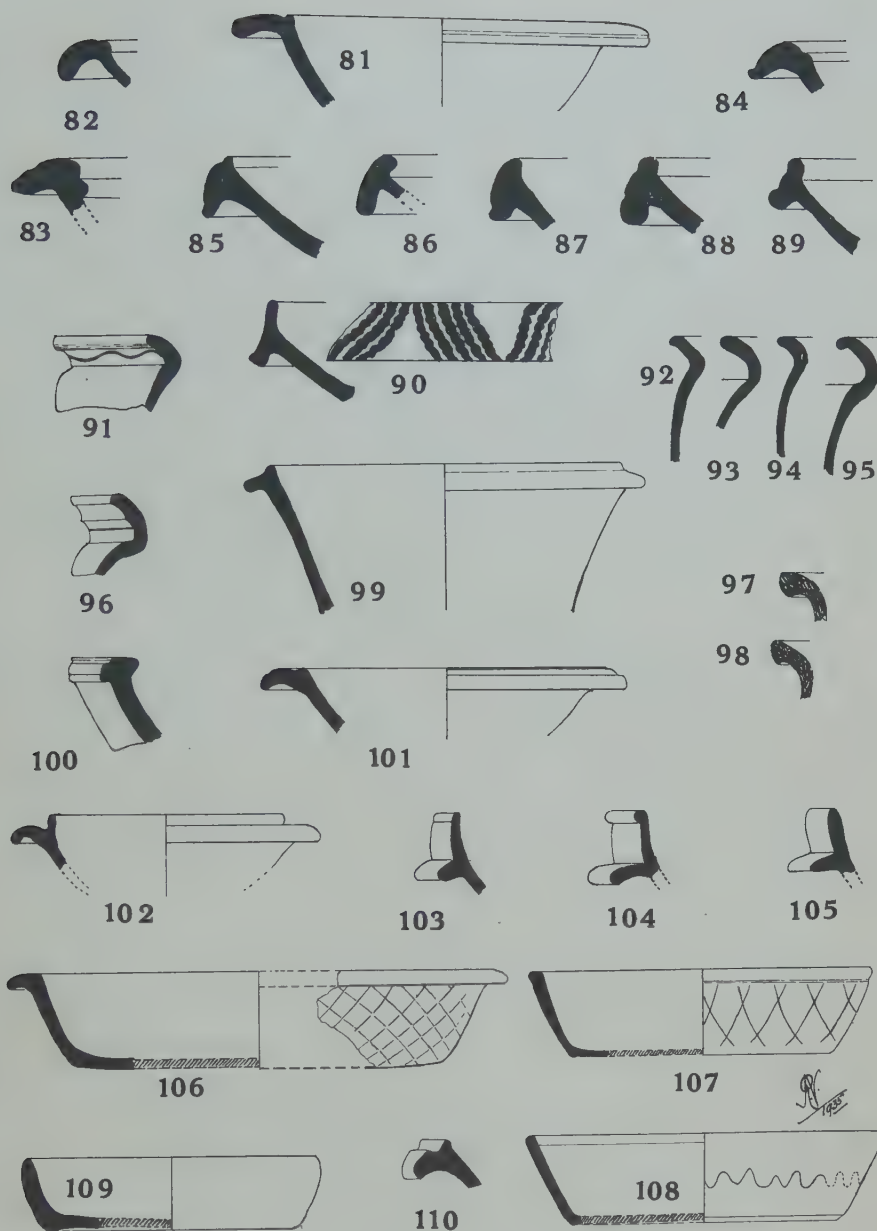
4. This necklace has been suspected, probably only because of the difficulty of reconciling its date with that of the scarabs it contains.

type, in particular the knielauf Gorgon and the Cerberus with two instead of three heads.¹ Further, the drill scarabs can scarcely be fitted into the regular Etruscan series. It is unlikely that while some of the artists were feeling after the academic correctness of the Hellenistic period, others should have concentrated on their own peculiar degeneration. The subjects of the drill scarabs are not those of the Etruscan, and are often Italic. It is in fact clear that the drill scarabs fall right outside the regular Etruscan series, and that therefore they have not degenerated from them. But the peculiarities of the drill scarabs may be exactly paralleled in Mesopotamian work; even the curious trick of representing a head by two spikes like a bird's beak is common in the Aegean area² on work of Neo-Babylonian character. It might be thought that a degeneration style might occur separately in both areas, but the drill style is a very specialised degeneration, and nothing like it is found elsewhere in ancient engraving. Sassanian gems are hardly an exception, since they can be distinguished at the first glance, and yet they were no doubt inspired by Neo-Babylonian models and probably by a real survival of the old tradition; yet often only the shape of the stone and the material will distinguish Neo-Babylonian from Etruscan work. In each country the artist selected the shape of stone and the subjects that would appeal to his customers; but the spirit and style of his work remain his own.

The history of the drill style throws an interesting light on the position of engravers in antiquity. The style preserved its individuality over eight centuries and in spite of three migrations. Such conservatism implies a guild, the members of which kept close together even when travelling across the civilised world. That they did not normally allow themselves to be separated may be inferred from the fact that the technique dies out in one country as soon as it appears in the next. Such a guild might well be confined to a few families, and the craft handed down from father to son. It would be pleasant to believe that it was a descendant of one of the old Minoan engravers who carved the death of a Greek hero for one of the new lords of Rome.

1. *J.H.S.*, 1898, p. 296.

2. There is a curious bronze ring in one of the Jerusalem museums which shows a quadruped with this type of head; it is probably the creation of a local artist imitating Mesopotamian work in this unsuitable material. Cf. the heads, Figs. 8 and 9.



BARRACK BUILDINGS.

COARSE POTTERY. UPPER ROMAN STRATUM. SCALE 1:4

DESCRIPTION OF PLATE

1. Agate scaraboid. Neo-Babylonian. Bought in Athens.
2. Chalcedony cone. Neo-Babylonian. Aleppo.
3. Rock crystal cylinder. These gems were probably produced for the Assyrian market by the same engravers as Nos. 1 and 2. Aleppo.
4. Rock crystal cylinder. Aleppo.
5. Chalcedony round scaraboid. Constantinople.
6. Natron-Agalmatolite lentoid. Athens; said to come from Melos. This gem is one of the latest of the Melian series.
7. Lentoid; hard stone. Late Minoan.
- 8 and 9. Round scaraboids of soft stone. These two gems are of the 'dark ages'; both show the beak type of head.

Nos. 7, 8 and 9 are in the collection of Sir Arthur Evans, to whom I am indebted both for permission to publish and for the excellent casts from which the photographs were taken.

REVIEWS

The Bucheum. By SIR ROBERT MOND, LL.D., F.R.S.E., and OLIVER H. MYERS, with chapters by T. J. C. BALY, D. B. HARDEN, J. W. JACKSON, D.Sc., G. MATTHA, and ALAN W. SHORTER, and the hieroglyphic inscriptions edited by H. W. FAIRMAN. Vol. I. The History and Archaeology of the Site, pp. i-xii, 1-203; Vol. II. The Inscriptions, pp. 1-92; Vol. III. Pls. I-CLXXIII, with index. London: The Egypt Exploration Society, 1934. Price £2, 10s.

These three volumes, recording as they do what is mainly the work of the younger generation of British Egyptologists, must assuredly create a feeling of lively satisfaction in the minds of all those who are interested in the future of Egyptology in this country.

The most has been made of the mass of material obtained from the excavations conducted at Ermant by Sir Robert Mond and Mr. O. H. Myers, who are to be congratulated on the systematic manner in which it has been published. The material has been written up not only by those actually engaged in the work on the field, but by a number of experts in various branches of research, such as Professor C. O. Bannister, Mr. A. Lucas, Dr. J. W. Jackson, and other well-known authorities, whose reports and analyses form a most valuable addition to the contributions of the pure archaeologists.

The amount of information that Mr. Myers has obtained from his painstaking examination of the very badly preserved mummies of the bulls is a real achievement (Chap. VI, with Pls. VII and XXIII-XXXVI). Most instructive is the use he has made of the *Apis Papyrus*, published by the late Professor Spiegelberg in *Zeitschrift für ägyptische Sprache*, LVI, pp. 1 ff. His two chapters (III and IV) on the architecture of the Bucheum and the various building materials employed contain matter of considerable archaeological importance and interest. In Chap. VIII is to be found what one hopes is only the beginning of the study of the Graeco-Roman and Coptic pottery, a study that has long been urgently needed, but has hitherto been persistently neglected by Egyptologists.

What Mr. H. W. Fairman has to say on the names and titles and the origins of Buchis throws much light on a cult about which little has hitherto been known. To the same scholar has been committed the task of editing the Buchis stelae, and his translations of the difficult Ptolemaic and Roman texts inscribed upon them, and the accompanying comments and philological notes, deserve the highest praise.

Mr. Mattha is also to be congratulated on his handling of the demotic

ostraca, a far from easy undertaking, as any student acquainted with such documents knows only too well.

Mr. T. J. C. Baly and Mr. Alan W. Shorter each contribute a useful series of notes on the Ritual Significance of the Funerary Objects (Chap. XVI) and the Amulets (Chap. XIII) respectively.

Among the numerous smaller objects discovered the most interesting, perhaps, are the enema, douche and vaginal retractors, which closely resemble those used by veterinary surgeons at the present day (Pls. LXXXVI and LXXXVII, pp. 64 and 100 ff.).

The plates, photographic and otherwise, are admirable. The unevenness of line in the drawings of the pottery (Pls. CXXVII-CLX) is not nearly as noticeable as Mr. Myers' remarks on p. 83 would lead one to suppose. Both volumes of text are well indexed.

A. M. BLACKMAN.

The Development of Sumerian Art. By LEONARD WOOLLEY.
Faber and Faber Ltd. 30s.

Archaeology, once the preserve of the scientist and the wealthy collector, has recently been thrown open to the man in the street. The excavator is morally obliged to publish the results of his work for the benefit of his fellow archaeologists, but popular versions are only too often left to the pens of amateurs whose enthusiasm can hardly make up for their ignorance and lack of judgment. Mr. Woolley therefore deserves to be commended for his industry in producing works of general and popular interest in addition to his scientific reports, and his *Development of Sumerian Art* is a valuable addition to the library of both expert and amateur. Apart from its archaeological interest, it is a very beautiful production. The text is printed in clear large type on good paper with wide margins; the illustrations are well chosen and very clear, whether in colour or in monochrome. The text is well arranged and easy to read. Each chapter is followed by a short bibliographical note, printed on a separate page, in the same clear type as the body of the text. Notes are usually difficult to find and to read; these notes are admirably placed in relation to the text. Their position at the end of the chapters marks the completion of the various stages of the narrative and emphasises the logical structure of the book, while their well-spaced pages, blank on the reverse, serve as end-papers to the chapters, each of which has its own title-page. The blank pages interspersed in the text give the book an air of leisurely dignity which is very pleasing. Mr. Woolley has been so considerate of his reader that the most critical can hardly find fault with the book as it is designed, but it may be regretted that, for ease of reference, the plates were not issued separately, either loose or bound in a companion volume.

In this book Mr. Woolley has collected illustrations of objects which have hitherto been scattered in various publications. He stresses the

importance of the relation between history and art development; this alone is a valuable contribution to the study of art history. Art at its best is a means of expression, and like the language of oral expression it develops in a logical fashion in accordance with the influences which beset it from time to time. Its rules are not arbitrary, but grow naturally from the need for an accepted convention which shall be intelligible both to the artist and to his public. Mr. Woolley traces the development of a style of architectural ornament from structural form; the style so developed becomes traditional and persists even when the structural basis has changed. In his description of the stone sculptures he shows how style is limited by material.

Since Mr. Woolley has carried out so well the task that he has set himself, it is perhaps unfair to criticise him for what he has not attempted to do. In an author's note, he explains that he does not intend to provide a critical appreciation of his subject. That is a pity. Many archaeologists make the mistake of considering the principles of primitive art not as positive facts, but merely as the negation of those principles which control modern art (modern is here used in opposition to primitive, and means the academic art of Europe which has adopted and developed the principles which were first introduced into Greek art of the fifth century B.C.). Mr. Woolley himself falls into this error, when on p. 59 he says that the Sumerian artist disregards perspective and sacrifices scale. On the contrary, the primitive artist uses scale to express not stature but status. One cannot but regret that Mr. Woolley did not invite the collaboration of some expert, who in a single chapter could have added a critical analysis of Sumerian art, with reference to the principles of primitive art in general. Such studies are sadly needed in this country in view of the general lack of interest in or knowledge of the subject. They would serve not only to correct the thoughtless clichés of the archaeologist, but also to divert from superficialities the attention of those artists who seek inspiration in primitive works and whose lack of understanding leads them to indulge in the vices of eclecticism and conscious archaism.

The book is a beautiful and valuable contribution to the history of art; it needs little more to make it invaluable.

ELAINE TANKARD.

Alt-Olympia. Untersuchungen und Ausgrabungen zur Geschichte des ältesten Heiligtums von Olympia und der älteren griechischen Kunst. Von WILHELM DÖRPFELD. Unter Mitarbeit von FRED FORBART, PETER GOESSLER, HEINRICH RÜTER, HANS SCHLEIF, FRITZ WEEGE. Two Volumes, with 86 text-figures and 38+24 Plates. E. S. Mittler & Sohn, Berlin, SW. 68, 1935. Price R.M. 30.

I could wish that this book had been different in various ways. I could wish that the very distinguished author had found it possible to

treat his material less forensically, or that his tone in dealing with past controversies could have been different. It is as if his adversary were still alive, and though it is nearly thirty years since Adolf Furtwängler died he is not yet allowed to sleep in peace.

I could wish, too, that the book had had another object, that of just setting forth all the facts discovered at Olympia, instead of that of arguing the truth of the theories which the author's later excavations were undertaken to prove—always a bad reason for excavation. I wish that the wild spate of theory could be diverted from and leave uncovered the firm rock of fact which in the present publication is almost completely submerged. Possibly at a later date some pious hand may, to change the metaphor, winnow the golden grain from the worthless chaff and give the archaeological world something into which it can usefully set its teeth.

The author's mind seems to work the wrong way. The words *ich habe mich davon überzeugt* might stand as a motto on the title-page. It is not proposed here to attempt to disprove Dr. Dörpfeld's theories. But as an example of his wrong way of arguing we may take his view on the dating of Corinthian pottery. Few things in archaeology are more certain than the general date assigned to Corinthian pottery. But because the Temple of Hera—which Dr. Dörpfeld, to suit his architectural notions, had decided must be dated as early as 1000 B.C.—was built over a piece of Corinthian pottery, he has convinced himself that Corinthian pottery is very much older than it is known to be. (After all, this is perhaps better than asserting that the piece of pottery never was there at all.) And because he has so convinced himself therefore (to turn to what is only a comment by the way, but has a particular interest for me) the imports of Proto-Corinthian pottery are to have reached Sparta not later than 1000 B.C., so that at the shrine of Orthia the 75 cms. between the Proto-Corinthian level and the infilling of sand is to represent the deposits of at least 400 years! He does not say whether he thinks that long enough for the development of the first and second stages of Laconian pottery.

It may be, however, that this desire to put back the origins of Greek pottery is in part due to a logical development of the *Bauernstil* heresy. The objection to the *Bauernstil* theory—the view that post-Mycenaean geometric was a direct descendant from Pre-Mycenaean geometric through a peasant style co-existing with the Minoan and Mycenaean styles—was that no examples had ever been found. It was a stroke of genius on Dr. Dörpfeld's part to see that we have had these examples before our eyes all the time in the Dipylon pottery! Some of the Dipylon ware we may still think as late as it has always been thought, but other specimens—which it is not quite clear—are to be as early as 2000 B.C.! No one with any feeling for pottery could accept this.

Among minor excitements in the book are the re-christening of the Apollo of the West Pediment of the Temple of Zeus as Zeus, and the view

strongly argued by Fritz Weege that the pediment sculptures are the work neither of Alcámenes nor of Paíoneus but of the young Pheidias. It was a view first put forward by H. Sitte some ten years ago, but it is now put with such force that we have no excuse to doubt.

The illustrations, maps, plans, and photographs are excellent.

J. P. DROOP.

C. A. AUTRAN: *Mithra, Zoroastre et la préhistoire aryenne du christianisme*. Pp. 280. 23 illustrations. Payot, Paris, 1935. 25 fr.

This interesting and informative book falls into two loosely related parts of which the former deals with Mithraism and the latter with Zoroastrianism. After a useful preliminary chapter sketching the influence of these two religions upon later religious thought, the author traces summarily the history of the cult of Mithra in Cappadocia, Vedic India, Persia, and the Roman Empire and examines its origins, which he claims to be pre-Aryan. In Chapter II he associates Mithra with the worship of the Earth-goddess, and professes to find the worship of this couple practised in the Third Millennium from the Indus Valley to the Nile via South Arabia and to the Aegean via Mesopotamia. In India, he maintains, Mithra was the prototype of Siva.

From this point, Autran devotes about fifty pages to an attempt to prove that this 'international' culture and religion were diffused by 'Dravidian' (=pre-Aryan) Indian traders and missionaries who were known to the Greeks as Phoinikes and included the *Τερμίλαι* of Herodotus, I, 173. This theory is buttressed by selected quotations from Greek tradition and by the comparison of Aegean personal and place-names with late Dravidian roots. Autran also revives the old theory that the 'Punt' of the Egyptians was philologically connected with 'Phoinikes' and was a seat of Dravidian traders. The theory is very cleverly and fascinatingly worked out, but philological equations are notoriously unreliable. While Autran has done valuable service in collecting most of the traditional material about the Phoinikes and in revealing the unsatisfactoriness of many current views regarding them, it is to be feared that his Dravidian theory is merely fanciful. Such archaeological and documentary evidence as we possess is against it, and Autran does not produce a single item of real proof.

In Chapters V and VI Autran describes the Mithraism of the Roman Empire and points out some of the well-known resemblances between it and Christianity, maintaining the arguable proposition that the latter was in all cases the borrower.

The second part of the book gives a valuable summary of Zoroastrianism and a discussion of its influence upon Judaism and, less directly, upon Christianity, especially in the domains of angelology, demonology and eschatology. The treatment is much fuller than is to be found in any of the standard histories of Judaism and Christianity, and may

be consulted by students with much profit, but the author errs in stressing unduly the contribution of the Persian religion which in most cases merely guided and hastened the development of factors already present in the pre-Exilic religion of Israel.

On pp. 223 f. Autran suggests a rather attractive Persian etymology for the Hebrew *Gê-hinnom* (Gehenna). On pp. 221 f. he mentions an obscure cuneiform text but gives no reference. On p. 178 he erroneously associates the Jewish festival of Purim with an 'Assyrian' instead of a Persian oppression, and on p. 196 mistakenly asserts that the Persian king (Cyrus) is called in the 'Torah' the 'Anointed (of the Lord),' whereas the reference is really to Isaiah, chap. XLV, 1. Autran's date for Isaiah, chaps. XL-LXVI (fourth-third century B.C.), on pp. 154 ff., is probably at least a century too late. Many theoretical conclusions throughout the book will be rejected by Christian and Jewish scholars. On p. 154 occur two misprints: the estimated date for Nehemiah should read '465-424,' and in the fourth line from the bottom 'LXVI' should be substituted for 'XLVI.' A few minor typographical errors also occur.

The book is provided throughout with excellent foot-notes indicating the author's sources. There is a full and serviceable index and the illustrations are aptly chosen though, rather inconveniently, not numbered.

While Autran's conclusions are often dubious his work is characterised by great learning and is valuable for the abundant data it furnishes to the historian of religion. It may be recommended, if used with caution, as a handy introduction to the somewhat neglected and still very controversial subject of the debt of Christianity and Judaism to Mithraism and Zoroastrianism.

CECIL J. MULLO WEIR.

Coins from Seleucia on the Tigris. By ROBERT HARBOLD McDOWELL.
University of Michigan Studies: Humanistic Series, Vol. XXXVII.
University of Michigan Press, Ann Arbor, Michigan. \$3.50.

This is the third volume on the excavations at Seleucia to be published since the work ceased in 1932—a most commendable promptitude, which is largely due to the excellent organisation of the work and the number of assistants available; for the work involved by the volume must have been enormous since the number of coins found exceeded 30,000!

Part I, three chapters, deals with the coins of the Seleucid Empire, a catalogue, notes, and conclusion. Part II treats of the coins of the Parthian period. The catalogue and a chapter of notes are followed by a chapter on the Parthian mint at Seleucia and another on the coins in relation to events in the western provinces. These last are of great interest as showing how the statements in the histories are confirmed and supplemented by the coins. The author believes that 'it is possible to draw evidence as to political conditions at Seleucia from the character

and the quality of the designs and the legends on the coins both royal and autonomous.' And certainly the plausible and interesting explanations that he offers help to justify the claim of Archaeology to be the handmaid of History.

J. P. DROOP.

The Swedish Cyprus Expedition: Finds and Results of the Excavations in Cyprus, 1927-31. Vol. II. By EINAR GJERSTAD, JOHN LINDROS, ERIK SJÖQUIST, ALFRED WESTHOLM. The Swedish Cyprus Expedition, Stockholm, 1935.

This second volume contains the account of work at five main sites: Amathus, Stylli, Marion, Idalion, and Ajia Irini. The two first were cemeteries covering the Cypro-Geometric and Cypro-Archaic periods; the third was a cemetery ranging from the Cypro-Geometric to the Hellenistic age; the fourth was an Acropolis, inhabited and fortified in Late Cypriote III, but subsequently used as the cult temenos of a goddess (whom the Greeks called Athena and the Phoenicians Anat) during the Cypro-Geometric and Cypro-Archaic periods, till Idalion was captured and ceased to exist as an independent state, when the goddess' functions apparently ceased; while the last, Ajia Irini, was a sanctuary to an unidentified deity which was first established in Late Cypriote III and lasted till the last quarter of Cypro-Archaic II, when after a third disastrous flood it was abandoned for 400 years till a poor revival of the cult took place.

This second volume (one volume of text and one of plates) fully maintains the very high standard set by Vol. I, which was noticed in these pages in Vol. XXII.

J. P. DROOP.

Excavations at Tepe Gawra. Vol. I (Levels I-VIII). By E. A. SPEISER, with a chapter by DOROTHY CROSS, and occasional notes by PAUL BEIDLER and CHARLES BACHE. Philadelphia, University of Pennsylvania Press. London, Humphrey Milford. Price 27s. net.

The authors of this exceptionally lucid and well-written account are to be congratulated upon the ability which they have displayed in making clear the real interest of an excavation which at first sight might have seemed singularly unremunerative. Their book illustrates no single object of beauty or even of outstanding individual interest, and no fragment of writing, a circumstance which can hardly be considered helpful in spite of what is doubtless a half-serious reference to 'eras as yet untroubled by inscriptions.' Failing these, they have yet evoked from the early settlements on Tepe Gawra all the information that such relics as now remain can furnish concerning the people who once lived there.

The site was a very prominent mound about two miles east of the more celebrated Assyrian ruins of Khorsabad. It was cursorily examined

by Layard, and first tested by Professor Speiser in 1927; systematic digging began in 1931 and 1932. The present volume deals with the results of these operations alone, and therefore is confined to the eight uppermost strata, numbered from the top. Of these, the first five belonged to the historical age, but they were not in general of much importance, since the area then available upon the mound was too limited to house a settlement of any great extent. Level VI was clearly distinguished by the metallic wealth and technical achievement of the flourishing period now known as the Early Dynastic. The next, VII, was a transition stage, chiefly marked as such by the change from stamps to cylinder-seals, but the most imposing remains belonged to level VIII, and comprised several well-preserved buildings, probably religious, which employed recessed brick construction, entrance-porches, vaulting, and windows. The date of this level corresponds roughly with that of the period called after Jemdet-Nasr in Babylonia, and with a part of the preceding Uruk period.

In this publication the excellent plan is followed of describing the remains of the various levels first in complete isolation and reserving until afterwards the external comparisons which naturally give the chief interest to an excavation in which the objects found are not of individual value. Among them, however, are several of peculiar interest, such as the clay models of animals said to be horses, from the VIth level, and therefore not later than the early part of the third millennium, also the model of a 'covered waggon' and a gaming die, from the same stratum. The 'hut-symbol,' a strangely-shaped stone object from the very early level IX, has become celebrated in connexion with a theory of its significance as a model of a primitive sanctuary constructed of reeds. There is also a rival theory which regards these objects as weights, though this is brought into some doubt as they are also found made of terra-cotta. Another example, of unknown provenance, in the British Museum may be added to those already known. The true explanation of them all is probably still to be sought.

Comparative discussion centres naturally upon the pottery, and many interesting relations with that found at Nineveh and Tell Billa are noted, and the connexion of all of them with the Babylonian sequence is established by careful argument. In this section the observation that Nineveh 'was quite deserted during the whole of the third millennium' is hard to understand in view of evidence mentioned elsewhere in the book. Also the one phallic object cited is a rather dubious peg upon which to hang an assumption that circumcision was practised by the prehistoric Gawrans in contrast with the inhabitants of Sumer.

Readers of this volume will look forward to its successor, which, in describing the lowest strata, promises to reveal the relics of a population which should be among the most ancient yet observed in the Near East.

C. J. GADD.